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The Lumleian Lectures
ON
ANGINA PECTORIS.

Delivered before the Royal College of Physicians of London

By WILLIAM OSLER, M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

LECTURE II.[1]

Delivered on March 15th.

PATHOLOGY.

MR. PRESIDENT AND FELLOWS,—Had Heberden listened to my first lecture he could have remarked very justly: "Well! they have not got much ahead since my day." In descriptive symptomatology we have not, and among 100 cases of angina pectoris there is no reason why Heberden should not have met all the important anomalies and complications. He had the good sense not to say much about the cause of the disease, and the good fortune to get very close to the truth in what he did say. I do not propose to weary you in a vain repetition of the scores of explanations which have been offered since his day. The older ones are to be found in the monographs of Parry and Jurine, the more recent in the Traité of Huchard, in the writings of our President, and in those of Allbutt, Bramwell, Gibson, Morrison, MacKenzie, and others. At the outset let us frankly face certain obscurities which have not yet been cleared up. Why is it more common in the upper classes? Why do we not see it more often in hospital practice? Worry and work are the lot and portion of the poor, among whom vascular degeneration is more widespread. It is as though only a special strain of tissue reacted *anginally*, so to speak, a type evolved amid special surroundings or which existed in certain families. Or there may be a perverted internal secretion which favours spasm of the arteries, as Harvey at Cambridge has shown to be the case with pituitary extract and the coronary vessels. And a case of aortic valve disease is reported in which the use of this extract caused anginal attacks. This suggestion is supported by the fact that in myxœdema anginal attacks may be caused by thyroid extract. I saw last year a patient of Dr. Lafleur's of Montreal with this most distressing peculiarity, which was mentioned to me also by Dr. Allan Starr of New York. The disease may occur in three generations, as in the Arnolds, and a father and four children have been affected. In three instances of my series father and son were attacked; in two, brothers; and in one, a brother and sister. It is not the delicate neurotic person who is prone to angina, but the robust, the vigorous in mind and body, the keen and ambitious man, the indicator of whose engines is always at "full speed ahead." There is, indeed, a frame and facies at once suggestive of angina—the well "set" man of from 45 to 55 years of age, with military bearing, iron-grey hair, and florid complexion. More than once as such a man entered my consulting-room the suggested diagnosis of angina has flashed through my mind. Still more extraordinary and inexplicable is an imitative feature, if one may so speak of it, by which the repeated witnessing of attacks may induce one in the observer. The case of Senator Sumner attracted widespread interest on account of his distinguished public position. Two weeks after his death Dr. Hitchcock, his physician, died in an attack with coronary artery disease and acute infarct of the myocardium. Tabor Johnson, his other physician, at that time a young man, had two attacks, diagnosed by Brown-Sequard as angina, and he had seen some twenty cases of what may be called the manufactured variety. Straus died not long after his friend Charcot. A young man, aged 28, whose father, a very vigorous planter, had through the spring and summer of 1900 severe attacks and died in one Sept. 28th, consulted me the following January for angina. I had seen the father, and had been a witness to the devotion of the son during the terrible paroxysms. Within a month of the death of the father he began to have severe pain in the chest, with pallor, sweating, the pains down the left arm, which became numb and tingled. The sister said the paroxysms were identical with those of the father, and naturally the family were greatly distressed. The patient was a healthy, robust fellow, very neurotic, and almost frightened to death. A reassuring prognosis was all the treatment he required. He has had no further attacks. A woman, aged 38, after her father's death from angina, had severe pains about the heart, and attacks which she insisted were of the same character, but she, too, got quite well. A still more remarkable illustration of the imitative, emotional influence was seen in the outbreak of angina-like attacks among the sailors of the French corvette *L'Embuscade* reported by Gelineau.

There are two primary features of the disease, pain and sudden death—pain, paroxysmal, intense, peculiar, usually pectoral, and with the well-known lines of radiation—death in a higher percentage than any known disorder, and usually sudden. Often, indeed, it is, as the poet says, "Life struck sharp on death." The problems for solution are: What is the cause of the pain? Why the sudden death? The secondary features of the attack, the vaso-motor phenomena, the radiation of the pain, the cardiac, respiratory, and gastric symptoms are of subsidiary interest.

MORBID ANATOMY.

Naturally, in the presence of a disease with such startling characters, men have sought an explanation in the bodies of its victims. And angina pectoris has a very definite morbid anatomy, few affections more so, since in practically all cases vascular disease exists. With Morgagni, Jenner, Fothergill, and Parry, a majority of authors have correlated the fatal symptoms with the arterial disease; others have reached the less satisfactory, if more philosophical, position of Rougnon, who, taking all the circumstances into consideration, concluded, "Monsieur Charles est mort parce qu'il est mort." Not a hospital disease, one naturally does not see many necropsies. I have notes of 17 post-mortem examinations, all in men, 8 of them in men under 40 and 4 of them with a history of syphilis, and dying at the ages of 34, 38, 37, 39. They fall in three groups—aortitis, coronary artery disease, and a negative case.

A. Aortitis.—From the publication of Morgagni's famous case writers have recognised the importance of aortic changes at its root. The special importance of this has been dwelt upon by my brother regius of Cambridge, whose many publications upon the subject, dating from his remarkable study of syphilitic arteritis[2] in 1868, have edified his colleague and students. For our purposes here there is but one aortitis—the syphilitic. Occasionally a fairly acute process occurs at the root of the aorta in the specific fevers, but this is very uncommon, except in connexion with endocarditis. Chronic atheromatous changes in the aorta of the aged are very rarely associated with angina unless the coronary arteries are involved. Syphilitic aortitis is a most distinctive lesion. I pass round the beautiful plate of Corrigan's paper, in which he brings out for the first time I think, and with great clearness, the connexion of the disease with this lesion. The frontispiece of Balfour's book on "The Senile Heart" gives an equally good representation. Upon its anatomical features I need not dwell further than to refer to its predilection for the supra-sigmoidal region, the sectional limitation, and the great frequency of its association with aneurysm.

Of the post mortem examinations of my series only one offered a good illustration of the supra-sigmoidal type; a negro, aged 38, who had had syphilis about a year before. The attacks of angina began in December, 1904; they lasted for from 15 minutes to half an hour, with very characteristic distribution of the pain; in severer paroxysms he had fallen unconscious. The attacks recurred even when he was in bed and quiet. There was diffuse cardiac impulse, the area of flatness was increased, but there were no murmurs; the blood pressure was 188 mm. Hg. On the evening of admission he had a very sharp attack, and another at 1.30 A.M., in which the pain was chiefly epigastric; he sweated profusely and became very weak, and at 2.30 was found unconscious, and died at 4 A.M. The heart weighed 490 grammes; the free edges of the valves were a little thickened; the only important lesion was an extensive fresh-looking aortitis, involving the root of the vessel and narrowing the orifice of the left coronary. The right coronary orifice was normal; the coronary arteries themselves were not affected.

[1] Lecture I. was published in THE LANCET of March 12th, p. 697

[2] St. George's Hospital Reports, 1868.

Another syphilitic patient, W. A. M., aged 38, admitted Feb. 20th, 1895, had very severe paroxysms of angina, with aortic insufficiency. The aortic segments were thickened and curled; the coronary arteries were small but healthy; there was the characteristic sclerotic aortitis not confined to the root. The smaller arteries of the body, particularly the splanchnic, were tortuous and thickened.

In a third syphilitic case, J. W., negro, aged 34, admitted May 25th, 1897, the paroxysms were most characteristic, and had recurred since March; in several attacks he had become unconscious, and following them he had transient weakness of the left arm. During the fortnight he was in hospital he had several severe attacks; the left arm was distinctly weaker than the right, particularly the grasp of the hand; the heart appeared to be normal. On June 8th he complained of a great deal of coldness of the hands and feet; at 6.10 in the evening he threw up his hands suddenly and died within a few minutes. Widespread aortitis of the sclerotic type, with here and there plaques of atheroma, were the only lesions. The coronary arteries were not involved; they looked small, the walls thin, but there was no occlusion.

B. *Coronary arteries.*—We are all united in the acceptance of the Jennerian view of the close connexion of lesions of the coronary arteries with the disease. As shown in the extensive analysis by Huchard, a very large proportion of all the cases show changes in these vessels. Of the 17 necropsies of my list, 13 illustrated all the varieties of the lesions.

(*a*) Narrowing of the orifices is a very common occurrence, particularly in the syphilitic aortitis, but not often met with without some involvement of the branches. In the case of a man who died suddenly in my wards after recurring attacks the sclerosis of the ascending part of the arch was marked and the orifices of the coronary arteries were extensively contracted; as the post-mortem report states, "they admitted only a bristle." The arteries beyond were nearly normal, showing only slight sclerotic change.

(*b*) Blocking of a branch with a fresh thrombus is very common in cases of sudden death in angina. In my post-mortem experience this has been more frequent in the medico-legal cases of sudden death without symptoms of angina. One of the main stems or a small branch may be plugged with the formation of fresh infarct. In patients who live some time the infarct may soften and pericarditis may be excited. A specimen in McGill College, from a man who died suddenly the day after an attack, shows the left coronary artery blocked by the thrombus and perforation of the softened anterior wall of the ventricle.

(*c*) Obliterative endarteritis, if we may judge from the reports of fatal cases collected by Huchard and others, is *the* lesion of the disease; it was present in nine cases of my series. The most remarkable peculiarity is the variation in the extent of involvement. The angina may be associated with obliteration of a comparatively small branch, or with a most widespread involvement of all the vessels. In the younger subjects the process is a gradual endarteritis with narrowing, and even complete occlusion of the vessel. In older subjects, the arteries may be converted, as in John Hunter and in William Pepper, into "open bony tubes." In one instance of my series the vessels were calcified to their smallest branches. Four cases showed disease of the coronary arteries alone; five in connexion with aortitis. In looking over these notes one is astonished at the comparatively small extent of coronary tubing which is sufficient to carry on the myocardial circulation. Mr. G., aged 39 years, an extraordinarily vigorous muscular man, after a day full of effort and strain, had read an important paper at a college society and died the following night in an attack. Not more than a third of his coronary vessels were in use. It has long been known that advanced coronary artery disease may be present without much disturbance of the function of the heart. There is not a clinician among us who could not furnish from his notes a dozen cases of this kind. A man may get on very comfortably with only the main branch of one coronary, practically a fourth of the whole system. A heart once in my possession showed almost complete obliteration of the left coronary, only a pin-point channel could be traced for a short distance. Of the right branch, the main division passing between the auricle and the ventricle was completely obliterated, so that the only one of full size passed in the posterior interventricular groove. The heart came from a large, very muscular imbecile, aged 36, an inmate of the Institution for the Feeble-Minded, at Elwin. I knew him well; a good-natured, helpful fellow, constantly employed in carrying about, and attending to, the more helpless children. He died suddenly one day in a fit. The coronaries are not endarteries in the sense of Cohnheim, and disease of their branches is not necessarily associated with angina.

(*d*) And in a few fatal cases no lesions whatever are found; we must accept the fact that angina pectoris may kill without signs of obvious disease in heart or blood-vessels. Such an instance has been reported by Dr. Bullard and myself.[3] The case was regarded by all who saw it as one of so-called functional angina. The patient, aged 26, was very strong and robust, devoted to athletics, and a heavy smoker. He had served in the United States Army, but was discharged in the spring of 1896 for attacks of angina. The chief feature was pain in the heart, and "awful cramps," as he described them, in his arms. The attacks were so severe that at times he became unconscious, and after one he was thought to be dead, and was about to be removed to the dead-house! The attacks were brought on by cold and exertion. The pain was evidently very severe, and in the major paroxsyms respiration would cease, and his pulse would become so feeble that he seemed to be dead. Only chloroform and morphia were of any avail in the attacks. He had an extraordinary number of attacks in 1896–7; Dr. Bullard had notes of 105. In 1898 he was better and had not nearly so many attacks, and was able to be at work. On Nov. 27th at 11.30 he had an attack of great severity; at 12.55 the doctor gave him chloroform; the attack was very prolonged, and the muscles of the chest became fixed, and remained so; he had a series of paroxysms and died at 6.40 in the morning. Except a few pleural adhesions, there was nothing special to be noted. The heart weighed 14 ounces; the muscle and the valves were normal. Just above the ring the aorta measured not quite 6 centimetres, a small vessel for a man of 5 feet 10 inches, weighing just over 13 stones. There was no disease except a flake here and there of atheroma. There was no thickening about the pericardium, and the sections showed no changes in the cardiac nerves.

PUMP AND PIPES.

The circulation as a whole may be compared to a vast irrigation system, with innumerable sub-districts of varied extent, under the control of local officers, but all under one central bureau, with which they are connected by telephone and an automatic signalling apparatus. The engine, pumping night and day, keeps a steady, uniform supply in the mains. The efficiency of the system depends upon the care with which the managers of the sub-stations regulate the flow to different plantations as occasion demands; the slightest disturbance in the most distant district is at once indicated by telephone to the central office, or in some instances automatically to the pump itself. Into certain vast irrigation areas with large sluice-ways all the water of the system can be diverted; and through carelessness of the men in control or through misinterpretation of a message from the head office, it sometimes happens that these sluice-ways are left wide open and the whole system is wrecked. Or strikes arise in local, outlying districts, the distributing mains are closed, and the pumping reservoir is flooded and permanently disabled. Or things go wrong in the central bureau—supplies are not forthcoming to keep up the plant, or there is litigation with neighbours, and the works are shut down, sometimes abruptly and without warning. What happens in a great irrigation plant happens also in the vascular system of the animal body, the mechanism of which, pump (heart), mains (aorta), sluices (arteries), and lakes (capillaries), is very much the same. Take two illustrations of its working. In Hill's experiment—hold a tame rabbit up with the forelimbs spread, and the gates of its splanchnic sluices will open so wide that the head office, pumping station, and whole irrigation system are wrecked in a few minutes. Try the same with the wild rabbit, whose splanchnic dam is under the control of trained officials—nothing happens. The pumping-engine itself is as sensitive as a galvanometer and has a marvellous mechanism for relieving and preventing any strain or tension on its machinery. Irritate with a probe, as in Stewart's experiment, the inner surface of the left ventricle, just enough to suggest or imitate tension, and automatically messages are sent, opening wide the most distant sluice-gates to prevent any strain on the pump itself. Or damage the main valve of

[3] Medical News, vol. lxxvii., p. 974.

the pump so that there is a leak with increased central strain, as in aortic insufficiency, and all the outlying territories open their sluice-ways to relieve the pressure. The circulation is maintained, equalised, and regulated by one working element—the muscle in the walls of its system, a peculiar, indeed a unique, type in the pump, ordinary unstriped fibre in the distributing channels. Both constituents, heart and arteries, are elaborately "wired" with nerves, which end about possibly in the muscle fibres, and there are peculiar end organs widely distributed (Paccinian bodies). Just as in the irrigation fields, pump and channels are connected by wires with the local and central offices of control, so the arteries and the heart are connected with centres, local and general, which act directly upon their muscular elements, by which the whole system is worked and regulated—an automatic set of fibres which keeps the head office constantly informed as to pressure conditions in the engine, a set which slows, and a set which hastens its action. Moreover, a complicated, subsidiary system coördinates the different parts of the heart ministered to by a tissue of special type, unlike the fibres of the heart itself or of the arteries. Not only does the muscular element maintain the circulation, but it keeps the vascular walls in a state of tension, a tonus or tautness which has an all-important influence in relieving the strain on the non-muscular elements. As Harry Campbell remarks in his recent Study of the Circulation,[1] "The greater the tonus of the muscular elements the more exclusively does the vascular strain caused by the blood pressure fall on them."

INVOLUNTARY MUSCLE PAIN.

Involuntary muscle pain has its peculiarities, and whether in artery, bowel, ureter, gall-duct, or uterus, comes in crises, storms, and outbursts. I have recently taken advantage of an unpleasant experience in my own person to observe the phenomena of these paroxysms in a ureter struggling with a calculus. Periods of complete freedom, extending from two to three, to eight or ten hours, attenuated with three types of disturbance of sensation—a dull, steady, localised pain, the situation of which could be covered with a penny. It could be imitated exactly by firm pressure with the handle of a knife, or, indeed, with a finger upon a bone, particularly upon that tender spot on the sternum just a little above the ensiform cartilage. Lasting for hours and unmoved it was fairly bearable. Now and then, when free from pain, there were remarkable flashes, an explosive sort of sensation, not actually unpleasant, and accompanied by a glow-like wave along the course of the ureter and out through the flank, as it were through the muscles. And then abruptly, or working out of the steady pain, came the paroxysm, like a twisting, tearing hurricane, with its well-known radiation, followed by the vaso-vagal features, the pallor, cold extremities, feeble pulse, sweating, nausea, vomiting, and in two attacks, a final, not altogether unpleasant period, when unconsciousness and the pain seemed wrestling for a victory reached only with the help of God's own medicine—morphia.

Any portion of the arterial system taken as a unit may present the phenomenon of involuntary muscle pain, and herein, I think, lies the key to the explanation of the anginal attack. The intermittency, the suddenness of onset, the steady, dull, enduring pain, and then the paroxysm, with its associated vaso-motor features, sometimes unconsciousness, and the radiations are paralleled in other involuntary muscle crises. Paralleled, but not equalled, and not often associated with the dangerous collapse symptoms, and rarely causing sudden death. And yet a man may die in renal or biliary colic, borne down in a vaso-motor storm, as happened in the only case of the kind I have seen.

CARDIO-VASCULAR PAIN.

What do we know about cardio-vascular involuntary muscle pain, and under what circumstances do we meet it? Like other viscera, the heart itself is insensitive to ordinary stimuli. You remember how this so amazed Harvey when handling the apex of the heart of the young Viscount Montgomery. Even his Most excellent Majesty, who studied the case with him, "acknowledged that the heart was without the sense of touch; for the youth never knew when we touched his heart except by a sight or the sensation he had through the external integument."

[1] THE LANCET, Jan. 15th, 1910, p. 193.

In most affections of the heart pain is conspicuous by its absence, particularly in the more serious maladies, so that it has almost become an axiom that "not much is the matter when a patient complains of his heart." Pericarditis may pass through all its phases without pain. Occasionally it is present in a marked degree, and it may be a special feature in the chronic mediastino-pericarditis.

In acute endocarditis pain is rarely present, and ulceration of valves or of the wall may proceed to a most extreme degree without any sensory disturbances. Of valvular lesions mitral disease is often associated with slight pain, particularly in children with greatly enlarged heart. And sometimes in women the pain is of great severity and persistence, but it rarely has the characters of true angina. There are a number of cases on my list with mitral lesion, stenotic or regurgitant, but, curiously enough, the only instance of attacks which I could call genuine angina pectoris in the stage of cardiac insufficiency occurred in a young girl of 11. And in this point I see that my experience coincides exactly with that of Nothnagel. On the other hand, lesions of the aortic ring are often painful, and attacks of true angina are common, particularly when the root of the aorta is involved.

Arterial pain is met with under many different circumstances, and may present all the features of angina. In the first place, external pressure directly upon the wall is associated with agonising pain. Those of us who as students took our turn in digital compression of the femoral artery for popliteal aneurysm have a lively recollection of the misery suffered by the poor patient.

Secondly, pressure from within; the pain caused by an embolus may be of the most terrific character. A man admitted to the Radcliffe Infirmary under Dr. Brooks—an old examination case of aortic insufficiency, with a loud, musical, diastolic murmur—had a sudden pain in his right leg, just below the popliteal space, and for days was in such agony that he had to have repeated hypodermics of morphia. As the swelling and pain subsided signs of an aneurysm became evident, and it was noted that the loud, musical murmur had disappeared. A calcified fragment whipped off from the aortic valve had torn the wall of the artery. Not only sharp emboli but the soft ones of ulcerative endocarditis cause intense pain. As I was going up the steps of the house of a patient, the diagnosis of whose trouble had wavered between typhoid fever and ulcerative endocarditis, I heard loud screams and found a young fellow in great agony, and he pointed to a spot below Poupart's ligament which he would not allow us to touch. He had embolism of the femoral artery, with subsequent gangrene of the leg. The intense colic of mesenteric embolism, such as we see in aneurysm, and occasionally in endocarditis, is of the same character, and it is diagnostic point between thrombosis and embolism of the cerebral arteries.

Thirdly, spontaneous tear of the arterial coats is associated with atrocious pain, with symptoms, indeed, in the case of the aorta of angina pectoris, and many instances have been mistaken for it. In this remarkable drawing which I pass round, of a split, fissured, and healed rupture of the internal coats of the aorta just above the valve, the patient was thought to have angina pectoris, and in the second attack, from which he died a year or more subsequently, a fresh split of the internal coats was found, which had ruptured into the pericardium.

Fourthly, as a result of extreme dilatation, distension, and stretching. Following the application of an Esmarch bandage, the arteries of the limbs dilate and throb, and there may be pain of a very intense character. In chilblains and in erythromelalgia the pain is probably arterial, and may be greatly aggravated with each systolic distension. In the excessive dilatation of the vessels following frost-bite the more rapid the dilatation the more intense the pain. As boys we had to give practical recognition to this point; if after a snowball fight anyone was foolish enough to put his cold hands into warm water he would be sure to suffer agonies of pain. An every-day cause of arterial pain is met with in aneurysm. In 132 cases of thoracic aneurysm the histories of which were carefully revised for this symptom pain was present in 104, and in 62 the trouble began with it. A feature of special interest to which attention has been called by many writers is the occurrence of attacks of angina pectoris as the first symptom. This happened in four cases in my series, and in every one of

them the anginal attacks disappeared with the increase in the size of the aneurysm. There are other mechanical causes of pain in aneurysm, but I think we all accept the fact that pain is a very constant feature in the early formation and growth of the sac. Stretching of the aorta without disease of its coats, as seen in the dynamic dilatation of aortic insufficiency and certain neurotic states, is not necessarily painful.

Fifthly, spasm of the arteries may cause severe pain. Slow, gradual contraction of the peripheral vessels due to cold is associated with a sense of numbness but not of actual pain. Scores of everyday vascular actions illustrate the same thing, and the radials may be contracted to obliteration of the pulse without any abnormal local sensations. On the other hand, there are types of arterial spasm accompanied with acute pain. Dubois, you may remember, referred the pain of hemicrania to angio-spasm. And our distinguished emeritus registrar, in his classical monograph on the disease, notes a number of instances and discusses this theory very fully. One does occasionally meet with an extraordinary degree of contraction of the temporal arteries during a paroxysm, but I have never seen an arterial distribution of the pain, nor are the vessels themselves sensitive.

The painful extremities in the various pathological states described as Raynaud's disease afford the best illustrations of disturbance of sensation as a direct result of angio-spasm. In a great many of the cases there is either obliterative endarteritis or the thrombo-angiitis of Buerger. But numerous observations show that spasm alone may account for all the symptoms. The paroxysmal character of the attacks, the intensity of the pain, the direct association with angio-spasm, suggest its vascular origin. It is an interesting point, too, that angina pectoris has been met as a complication of Raynaud's disease. In the case reported by Cleeman, a man, aged 62 years, had from his fiftieth year severe attacks of Raynaud's disease, chiefly in the hands, and usually in the winter season. Following several pronounced attacks of local asphyxia, and local syncope in the hands, he had one day a very severe paroxysm of angina pectoris: the pain lasted for two hours and was of such intensity that he was greatly prostrated. The association of migraine with angina pectoris, particularly the vaso-motor type, has long been recognised, and is discussed by Dr. E. Liveing; two of my patients had been great sufferers with typical migraine.

ARTERIAL SPASM.

Let us now consider in what conditions we actually see spasm of the arteries; and by spasm I mean a persistent contraction leading to ischæmia, with disturbance of function of the parts supplied. Raynaud's disease is, of course, the type of an angio-spastic affection. One does not actually see the arteries contract, but one may feel the gradual reduction in volume of the pulse, even to obliteration. One may feel a full, easily palpable radial contracted to a narrow cord, followed by a gradual blanching of the skin of the hands. The spasm may affect the smallest twigs, such as those distributed to the extreme tips of the fingers, or it may be the tip of one finger only. The spasm is not always painful, but it may be associated with intense pain, and I have noted in one or two instances that there is greater pain with the local syncope, and the reactionary intense hyperæmia, than with the cyanosis. Of late in so many instances of so-called Raynaud's disease arteritis has been discovered that is well to insist upon the fact that the most advanced necrosis may occur as a consequence of spasm in vessels apparently healthy. Russian Jews are subject to a very remarkable malady studied by Buerger of the Mount Sinai Hospital, New York. While similar in some features to Raynaud's disease, it differs anatomically in having widespread obliterative endarteritis, with thrombosis of the veins; indeed, the disease may begin in the veins, so that Buerger calls it "thrombo-angiitis." The same condition has been shown by Parkes Weber in several Russian Jews at the Clinical Section of the Royal Society of Medicine. Buerger writes me that in two cases of typical Raynaud's disease in which he performed amputation of the leg the arteries were found normal; evidence of exceptional value, as this observer has made a special study of the condition of the vessels in some 30 or 40 cases of thrombo-angiitis of the leg.

There is one place in which we can actually see spasm of the arteries associated with loss of function. In numbers of instances of amaurosis spasm of the papillary arteries has been noted by Priestley Smith and others. I have seen but one case myself—a man with small contracted kidneys and the usual associated vascular changes, became blind while walking from the out-patient department to the ward, and was unable to see for some hours. The retinal arteries on both sides were strongly contracted and I had the advantage of the confirmation of the observation by my colleague, Buller, the well-known ophthalmic surgeon. In Raynaud's disease a similar contraction of these vessels has been seen, originally by Raynaud himself, since then by a number of observers, and quite recently in an interesting case reported by Friedman.[5] In none of these cases has pain been mentioned as a symptom. I know of no other conditions in which we actually see angio-spasm with disturbance of the function.

And now let us leave the solid ground of observation for a few minutes. As I mentioned in my first lecture, the term "vascular crises" was introduced by James Collier in discussing the features of erythromelalgia, and it is a most useful term which admirably expresses the state of affairs in the recurring paroxysms of Raynaud's disease. It has been used with great effect by recent authors, particularly by Pal of Vienna, in whose monograph, "Gefässkrisen" (Leipsic, 1905), the whole question is exhaustively considered, more particularly in reference to its association with high tension and arteriosclerosis. The profession is at present riding on the top of a cardio-vascular wave, and it is impossible to approach questions without considering blood pressure and sclerosis. In Pal's hand the vascular crisis is a key to unlock many of the mysteries of disease in head, chest, and abdomen. Paroxysmal high tension we know with its remarkable phenomena—cardiac dyspnœa, cardiac pain, headache, uræmic symptoms, nausea, vomiting, and convulsions. No one who has seen much of blood pressure work can doubt that in patients with arterio-sclerosis these paroxysms play a very important part; but when we come to conditions of *local* high tension associated with contraction of the arteries, I confess that we are a little bit in the spray of the wave, and yet it may be used as a working hypothesis to explain a whole group of obscure conditions. As briefly stated, Pal's contention is: "Where the tension is produced by contraction in a definite vascular area, local consequences follow and dominate the picture. These are manifest chiefly by a peculiar painful sensation and local disturbance of function. General phenomena to a greater or less extent are manifest at the height of the tension." One is a bit staggered at the very free use which many writers make of the vascular crises, but it is a seductive theory and only the name is new. We have, I think, evidence that sclerotic arteries are specially prone to spasm. In many of Buerger's cases of thrombo-angiitis the symptoms were in part due to spastic contraction; in intermittent claudication vascular spasm plays a part, and one may actually see the foot get pale, as the patient begins to complain of pain and stops walking. We have really very little positive evidence of angio-spasm of the internal vessels. In a few remarkable cases of Raynaud's disease transient cerebral symptoms have occurred—aphasia, monoplegia, epilepsy, either at the time of or alternating with peripheral attacks. So transient has been the disturbance of function that it could be scarcely any other condition than angio-spasm. This was the view I took of the two remarkable cases which I reported some years ago. Now we have in arterio-sclerosis identical transient cerebral attacks for which it is scarcely possible to offer any other explanation. The condition, familiar to me for more than 25 years, was brought to my notice by the illness of a warm personal friend, who before his forty-fifth year was the subject of the most advanced sclerosis, with high tension. He had literally scores of attacks of transient paralysis, of monoplegia, asphasia, occasionally hemiplegia for 24 hours; and once as he got off the steamer after a trip to England he became paraplegic and remained so for nearly two days. The attacks are not always associated with very high tension. The cases are by no means uncommon, and a peculiarity is the extraordinary frequency of the attacks and their transient character. The question has recently been reopened in an interesting discussion on intermittent closure

[5] Friedman: American Journal of Medical Sciences, February, 1910.

of the cerebral arteries by Lauder Brunton, William Russell, and Hobhouse in the *British Medical Journal* towards the end of last year. The correspondence shows how numerous are the cases. It will be fresh in your memory how ably Dr. A. E. Russell supported the vaso-motor or arterial-spasm view of the origin of epilepsy in the Goulstonian lectures of last year.[6]

What evidence is there of the existence of angio-spasm in angina pectoris? In many cases the attack begins directly as a peripheral vaso-constrictor storm, with cold hands and cold feet, pallor of the face, and sweating. Nor is this simply in the so-called functional type, but in the severest forms an emotional disturbance may initiate a widespread contraction of the arteries. During the paroxysm it is by no means uncommon to find the radial pulse on one side very much smaller than on the other. I have notes of six cases in which this observation was made, and there may be associated pain, numbness, and tingling. In a few instances spasm of local arteries has occurred with the features of Raynaud's disease. I have already mentioned Cleeman's case in which the diseases coexisted. And Worton[7] has reported an instance in a woman, aged 54 years, in whom after attacks of angina the tip of the left middle finger always became dead white and numb. That is as far as the facts carry us, and they indicate a widespread tendency in the disease to angio-spasm. I discussed in the last lecture with a purpose the extra-pectoral phenomena of the disease, as these receive their most suitable explanation in the spasm of the arteries. In one case the attacks of pain in the leg occurred with intermittent claudication. The sensations in the leg in Dr. W. W. J.'s case, which initiated the attack, were identical with those I have seen in the arm, with definite contraction of its blood-vessels. The three cases with transient aphasia or paralysis during the paroxysms are suggestive of intermittent closure of the vessels, particularly when one considers the similar attacks in Raynaud's disease and the frequency of such a transient paralysis in arterio-sclerosis. It is quite possible that the pain in the testis, such as I have reported, and of which there are a number of cases in the literature, may be associated with arterial spasm, and a suggestive fact is that the organ may become swollen after the attack.

A consideration of the very important group of cases in which the pain is limited to the abdomen throws light on the question. Except in distribution the symptoms may be identical. Pectoral and abdominal attacks may alternate, or one may spread into the other. Death may occur with only the abdominal pain. Special consideration of this angina abdominis may be found in the "Archiv für Verdauungs-Krankheiten," Band IX. and X., by Buch. These attacks have a striking resemblance to three well-known forms of abdominal crises—the lead, the tabetic, and that met with in purpura and angio-neurotic œdema.

The whole question of visceral pain has of late years undergone revision. Haller, Mackenzie, Lennander, and others conclude that practically all organs innervated by the sympathetic and vagus are insensitive to ordinary stimuli. After having gone through a painful visceral experience, one appreciates the force of Dr. Johnson's method of refuting Bishop Berkeley's theory of the non-existence of matter. "I refute it thus," he said, kicking a stone; but of course they refer to ordinary extrinsic stimuli. It was Riegel, I believe, who first suggested that the pains of lead colic were due to spasm of the branches of the intestinal arteries, with ischæmia and œdema of the wall. Pal explains the abdominal pains in tabes as a vascular high-tension crisis, with spasm of the smaller intestinal arteries, and stretching of the nerve plexuses of the proximal arterial wall. Very high peripheral blood pressure exists during the paroxysms, as in a case recently reported by L. F. Barker,[8] in which, in a woman, the pressure rose to 210 mm. Hg. It is a reasonable inference that the crises of these two states are really vascular. We have positive evidence of it in the extraordinary abdominal crises of purpura and angio-neurotic œdema. There are now nearly a score of cases which have been operated upon for "the acute abdomen." Œdema of the wall of the stomach or bowel, or œdema with hæmorrhage, has been the usual condition found; though, as in the remarkable case reported in last week's LANCET by Collinson, intussusception may be present, and it would be very apt to follow a localised œdema. I do not know that these cases specially favour a view of angio-spasm, but they, at any rate, point to a vascular origin. We may accept the view that the bowel wall is insensitive to ordinary stimuli, but the visible peristaltic colic of any chronic obstruction, with its character of smooth muscle pain, demonstrates in blunt Johnsonian fashion the existence of nerves capable of transmitting painful sensations from intrinsic stimuli, whether they exist in the arteries alone, as some believe, or are distributed among the tissue elements of the wall itself.

[6] THE LANCET, April 3rd (p. 963), 10th (p. 1031), and 17th (p. 1093), 1909.
[7] THE LANCET, April 16th, 1898, p. 1053.
[8] Johns Hopkins Hospital Bulletin, February, 1910.

THE CONCLUSION OF THE MATTER.

After all this talk, what in a few words is a reasonable explanation of the pain in angina? Angina results from an alteration in the working of the muscle fibres in any part of the cardio-vascular system, whereby painful afferent stimuli are excited. Cold, emotion, toxic agents interfering with the orderly action of the peripheral mechanism, increase the tension in the pump walls or in the larger central mains, causing strain, and a type of abnormal contraction enough to excite in the involuntary muscles painful afferent stimuli. Mackenzie suggests that there is rapid exhaustion of the function of contractability, which is after all only the *fatigue* on which Allan Burns laid stress; but I feel that in disturbance of this Gaskellian function is to be sought the origin of the pain, whether in heart or arteries. This is practically the explanation given by the late T. K. Chambers and by Lauder Brunton and has received, Sir, your sanction. In stretching, in disturbance of the wall tension at any point, and in a pain-producing resistance to this by the muscle elements, lie the essence of the phenomena. In a man with arterio-sclerosis and high pressure, and all the more likely if he has a local lesion, a syphilitic aortitis for example, disturbance, at any point, of the tension of the wall permits the stretching of its tissues. Spasm or narrowing of a coronary artery, or even of one branch, may so modify the action of a section of the heart that it works with disturbed tension, and there are stretching and strain sufficient to arouse painful sensations. Or the heart may be in the same state as the leg muscles of a man with intermittent claudication, working smoothly when quiet, but instantly an effort is made, or a wave of emotion touches the peripheral vessels, anything which heightens the pressure and disturbs the normal contraction, brings on a crisis of pain. I do not know of any better explanation of anginal pain, and it is nice to think that in its main features it came from one of the earliest and ablest of British student of diseases of the heart—Allan Burns.

What is the explanation of the sudden death? There are three modes of dying in angina pectoris. The one which specially interests us here is the form which, as Walshe says, "is sudden, instantaneous, coeval, with a single pang." It is the quickest death we see, and is that which may have been in John Henry Newman's mind when he penned the lines describing the death of his mother—

> "One moment here, the next she trod
> The viewless mansions of her God."

No form of death so placid, so peaceful, and so much to be envied, as it probably is without a pang. The functions of life appear to stop abruptly, with a gasp or two all is over. It is extraordinary how little a man may be disturbed in this death. An old doctor whom I knew well stopped at his house to write a prescription. With pen in hand he died at the desk, where I found him, as if in sleep, with his head peacefully on his arm and pen in hand. Another friend the subject of angina, whom I had only left a few minutes previously, talking quietly to Dr. Thayer, fell over on his bed, both pulse and breathing seemed to stop simultaneously. It must be a vagal death, a sudden inhibition of the inspiratory centre in the medulla. No other explanation seems possible for such a condition as that which I described in the last lecture, in which the respiration stopped abruptly and in which a feeble heart's action continued for 45 minutes. It is exactly paralleled in chloroform death, when the inspiration stops abruptly, while the heart may continue to beat. In a third case in which I saw the death the suddenness with which the change took place was extraordinary. He was a man, aged 48, who had had very

severe attacks. During my visit he was very comfortable, and he talked pleasantly and hopefully about getting back to his work. I was about to leave the room when he gave a sudden cry, clasped his hands over his heart, the eyes became fixed, and he fell over dead after giving two inspiratory gasps. No pulse could be felt at the wrists, but feeble heart sounds could be heard for three minutes.

A second mode of death is also seen in which, following a series of severe attacks, the heart grows gradually feebler, and the patient dies in progressive asthenia, often with Cheyne-Stokes respiration.

And thirdly, a certain number of patients die in the cardiac complications, and it is interesting to note how after great misery, caused by repeated attacks, when cardiac insufficiency is established, even with the dyspnœa, the patient is much happier, and dies slowly, if not so suddenly and placidly.

A Lecture
ON
THE TREATMENT OF THE SURGICAL FORMS OF TUBERCULOSIS BY TUBERCULIN.

Delivered at the Medical Graduates' College and Polyclinic, London, on Jan. 31st, 1910,

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GENTLEMEN,—Two years ago I had the honour of delivering a lecture in this College on Tuberculosis, which was published in THE LANCET,[1] and I then brought before your notice 104 cases of so-called surgical tuberculosis which I had treated with Koch's tuberculin. I promised to delay my decision on the efficacy of the treatment until two years had expired, and I now have pleasure in further reporting to you the results of my work.

The views which I venture to lay before you to-day are based on an observation of over 4000 cases of pulmonary tuberculosis, and over 1800 cases of so-called surgical tuberculosis, all of which have been under my own care in hospital. In addition to this exceptional opportunity for clinical observation I have made over 2000 necropsies on tuberculous cases. My endeavour has been to form a judgment on this most difficult problem from clinical study of all the various manifestations of the disease, and to try, if possible, to discover the cause and mode of entry of the bacillus in each particular case.

The theory which I published in 1903, and which further work only tends to confirm, is briefly as follows: That tuberculous lesions in the human body must be divided into two great groups according to their origin, and that the true example of human infection is pulmonary tuberculosis or consumption; in other words, man is susceptible to both human infection and bovine infection.

1. Bacilli of the typus humanus produce the following lesions: (1) pulmonary tuberculosis; (2) tuberculous laryngitis; and (3) secondary intestinal ulceration.

2. Bacilli of the typus bovinus produce (1) tuberculosis of mesenteric glands and intestines, (2) of peritoneum, (3) of lymph glands, and (4) of genito-urinary organs; (5) lupus; (6) acute miliary tuberculosis; and (7) meningitis (often).

METHODS OF INFECTION.

From my observation of a large number of cases, both ante- and post-mortem, I would say that the lungs may be infected in one of four ways: (1) Direct inhalation of bacilli; (2) downward infection from cervical lymph glands; (3) upward infection from abdomen through diaphragm to bronchial glands (lymphatic); and (4) by blood stream, as in acute miliary tuberculosis. It is also of importance to bear in mind that the lungs may be seriously infected with bovine infection, either from the digestive tract or from lymph glands.

[1] THE LANCET, Feb. 15th, 1908, p. 481.

If we examine hundreds of cases of consumption in sanatoria we must all have been struck with the fact that in nearly all the cases the disease is confined strictly to the lungs and that it is most rare to find tuberculous joints and glands or lupus associated with phthisis. On the other hand, it is rare to find cases of joint, gland, or abdominal tuberculosis develop phthisis, as they generally die from waxy disease and exhaustion. I have never met with a case of abdominal tuberculosis or tuberculous glands which had not been fed on cows' milk, and although over 15,000 children under the age of 1 year have been fed with sterilised milk and careful records kept, yet no single instance of tuberculosis of the abdomen or glands has been observed. I have never observed a single case of true phthisis pulmonalis in an adult develop tuberculous meningitis.

It has been strongly stated by several observers that 80 or 90 per cent. of all necropsies show a tuberculous infection, but these are not human infections: the great majority of them are mild bovine infections which have healed and caused no further trouble, although some of them light up after measles and other acute diseases and cause a general tuberculosis.

From my observations I am led to the conclusion that human and bovine bacilli are different varieties of an originally common species, and that the human body may be attacked by both of them, but that bovine infections are almost always produced in the milk-drinking period. We must attack the disease from both these sources. When pure milk can be supplied to children it is my opinion that the non-pulmonary forms of tuberculosis in children will disappear. But even if tuberculosis amongst cattle entirely disappeared to-morrow, we should still be left with the dread consumption which will only be stamped out by steady coöperation, education, and improved hygiene, combined with the most enlightened methods of prevention and scientific treatment.

This artificial division is purely tentative and may have to be considerably modified in the light of future investigation, but for the present, I am convinced of this distinction and the whole of my work is based on this idea. These two great groups of tuberculosis seem to be antagonistic to each other, so that a person who has been attacked by pulmonary tuberculosis is not likely to suffer from any of the lesions produced by the bovine group, and of course, persons who have been attacked by the bovine group seem to be protected against pulmonary tuberculosis. It must, however, be clearly understood that the lungs may be attacked by bovine tubercle bacilli either in the form of acute miliary tuberculosis of the lungs, or in the course of a general blood-stream infection. The lungs may also be attacked by direct extension from tuberculous glands in the neck, resulting in a complete disorganisation of the lung which cannot clinically be distinguished from ordinary pulmonary tuberculosis. I propose to call this infection of the lungs "Bo-phthisis."

Just as various tuberculous lesions seem to have an antagonism to each other in the body, so the various kinds of tuberculin have a selective influence in their curative effects. It seems to be impossible to produce an immunity either in animals or in the human body by repeated injections of the same form of tubercle as that from which the patient is suffering. Repeated experiments have shown that cattle cannot be immunised or protected against bovine tuberculosis, by small and repeated injections of bovine tubercle, but, on the other hand, it has been found easy to immunise large numbers of cattle against tuberculosis by injecting them with small and accumulating doses of human tubercle bacilli. It seems, therefore, from these experiments that the same principles will have to be applied to the human body in the treatment of the various forms of tuberculosis, and I have found that Koch's tuberculin R. has proved of little value in the treatment of pulmonary tuberculosis, which is what we would expect when we remember that it is prepared from human tubercle bacilli. It is, however, not the case in the treatment of tuberculosis of the bovine group.

Koch's tuberculin R. has a most beneficial and curative effect in treating all forms of so-called surgical tuberculosis which are in my opinion of bovine origin, and I have to record a large number of apparent cures by the use of this tuberculin. It is my firm opinion that by far the larger proportion of tuberculous glands, abdominal tuberculosis, and

meningitis are the result of infection during the milk-drinking period of life (0–3 years), and I am convinced, from an observation of a great many cases, that when tuberculosis is eradicated from dairy cows it will be a rare event to see a case of surgical tuberculosis in the human subject.

TUBERCULINS.

In treating cases of tuberculosis with bacterial products our aim is to attain an immunity against the tubercle bacilli themselves. In using Koch's old tuberculin we aim at immunity against the bacterial toxin. In using Koch's new tuberculin we aim at immunity against the bacteria. Koch's aim was to combine in his later treatment both these forms of immunity in the treatment of tuberculosis.

Before discussing the actual effects and results of treatment it is necessary to mention briefly the various tuberculins and other preparations which have been suggested and used by different observers, all more or less based on the same lines. We owe to Koch the three chief preparations now in general use, and these will be taken as a basis for consideration of the whole question; the other remedies suggested will also be described. In the first place, we must carefully distinguish between those preparations which produce an active immunity and those which produce a passive immunity. In active immunisation the organism has to produce specific antibodies in the serum, as the result of the absorption of bacteria or their products; on the other hand, in passive immunisation these are already produced in some other organism and introduced into the human body by means of a specific serum.

The discovery of tuberculin by Koch after years of incessant labour is described in his own words. He found primarily that animals which were tubercular reacted in quite a different manner to infection from animals which were non-tubercular.

> When a healthy guinea-pig is inoculated with a pure culture of tubercle bacilli, as a rule, the wound closes and appears in the next few days to have healed. But in the course of 10 to 14 days a hard nodule appears, which soon breaks down and remains until the death of the animal as an ulcerating area. The course is entirely different when an already tubercular guinea-pig is inoculated; the animals best suited for the purpose are such as have been successfully inoculated four to six weeks previously. In such an animal the wound closes at first, but no nodule develops, and on the second or third day a characteristic change occurs at the site of inoculation; it becomes hard and assumes a dark colour, and this change is not limited to the site itself, but spreads over an area of diameter 0·1 to 1 centimetre. From day to day it becomes clearer that the altered skin has become necrotic, it is finally cast off, and there remains a flat ulcer which generally heals quickly and permanently, without any infection of the regional lymphatic glands.
>
> Koch found, further, that sterilised cultures of tubercle bacilli rubbed up in water, and injected, even in considerable quantity, into healthy guinea-pigs, only gave rise to suppuration, but that in tubercular animals very small quantities of the same cultures sufficed to kill within a short time. Their lives, however, may be saved by the repeated methodical use of high dilutions, and obvious improvements obtained. When emulsified bacilli were employed it was found that they were not absorbed at the site of injection, but remained a considerable time unaltered, giving rise to local abscess. The curative substance must then be dissolved out of the body-juices, bathing the bacilli, whilst the substance giving rise to abscess formation remains behind apparently in the bacilli, or is only very slowly dissolved out.

Koch showed that man was more susceptible to tuberculin than the guinea-pig. He also expressed the opinion that tuberculin had no specific action in killing the tubercle bacilli in the tissues, but that the tissues enclosing the bacilli were affected with great circulatory and metabolic changes, causing the tissues to slough and become necrotic. Koch held the view that the disappearance of the reaction to tuberculin was due in the body to the destruction of the tubercular tissues, but later views suggest that this is due to immunisation against the toxins of tubercle bacilli.

The result of this view as to the exact action of tuberculin led to the administration of doses which were too large and even dangerous, and although cases of localised disease, such as lupus, &c., were apparently cured, yet advanced cases of phthisis were certainly aggravated by this excessive reaction, with the result that the treatment fell into disuse and was for a time discredited. A few enthusiastic and scientific workers, however, revived the tuberculin treatment, amongst them being Spengler, Petruschky, Krause, and Thorner. The idea was to give tuberculin in small and graduated doses so as to avoid severe reactions, and yet ultimately to arrive at large doses by gradually producing an immunity in the tissues of the patient.

This method has proved of immense benefit and has met with striking success. Bandelier and Roepke describe it in the following words. 1. It fulfils the first axiom in all medical treatment, *nil nocere*, and at the same time cuts the ground from under the opponents of the method. 2. It is in accordance with the demand to avoid reaction by using the minutest doses, and yet allows the highest and most potent doses to be reached. 3. It extends the indication for tuberculin treatment by bringing the severer forms within its reach. 4. It admits of the simultaneous and unhindered application of other well-proved methods of treatment and may be carried out in out-patients' practice without sacrifice of occupation.

TUBERCULINS ORDINARILY USED.

Koch's old tuberculin.—This was prepared by Koch in the following manner. He took pure cultures of tubercle bacilli which had been grown for six weeks on 5 per cent. glycerine broth, filtered and concentrated the filtrate to one-tenth of its volume, thus obtaining the soluble bodies secreted by the tubercle bacilli in a 50 per cent. glycerine medium. The dilutions are then made in the ordinary way, and a dosage commencing at 1-10th of a milligramme and gradually rising to 100 milligrammes may be used. In some cases, however, this initial dose was found to produce a reaction, so that a dose of 1-100th or even 1-1000th part of a milligramme is employed, gradually rising to the same maximum dose.

Koch's new tuberculin.—This preparation is quite different from old tuberculin. It is made by grinding dried cultures of highly virulent bacilli in an agate mortar and then centrifugalising them in distilled water. After centrifugalising, the fluid is poured off and this is called tuberculin O. or T.O. It is then centrifugalised again, when the fluid remaining is called tuberculin R. or T.R. This preparation is standardised and is preserved by the addition of glycerine. The initial dose is 1-1000th part of a milligramme, gradually rising to, in some cases, a maximum dose of 20 milligrammes.

Koch's bacillary emulsion, T.E.—With the object of increasing the specific agglutinins in the blood Koch introduced this preparation, which has been highly praised by several observers. Koch found that the greater the amount of the substance of the bacillus in the remedy the greater the increase of agglutinins in the blood. He concluded, therefore, that it was possible to produce the greatest immunity by an emulsion of the bodies of the bacilli. It is preserved in glycerine and the dilutions are made in the ordinary way. The dose is 1-2000th milligramme every third or fourth day and the amount is steadily increased until a maximum of 20 milligrammes is reached. Theoretically this preparation is a good one, but there are many objections, sentimental and otherwise, to injecting bacilli, although they are, of course, incapable of producing tuberculosis.

Koch's new tuberculin (bacillary emulsion) is a suspension of one part of pulverised tubercle bacilli in 100 parts of distilled water to which equal parts of glycerine are added. The stock solution contains in 1 cubic centimetre 5 milligrammes of solid residue. The initial dose in early cases of tuberculosis is usually 1-1000th of a milligramme, and according to the original instructions this dose should be rapidly increased until well-marked reactions follow. One of the most useful effects of this tuberculin is the almost certain reduction of fever, and I have on several occasions found that a high temperature has rapidly been reduced after five or six injections of bacillary emulsion.

Deny's tuberculin.—This is made by filtering a culture of human tubercle through a porcelain filter. The culture is grown on peptonised and glycerinated bouillon and brought to full development. The object of Denys was to prepare a tuberculin which would produce a gradual and lasting immunity. By injecting healthy dogs with this preparation in increasing doses he was able to protect them against lethal doses of tubercle bacilli without producing any sign of the disease. The guiding principle of this treatment is the mild form of administration, avoiding all reactions and watching carefully the effect of each dose so as to find the tolerance of the patient to this particular tuberculin. Denys himself reports favourable results in over 200 cases, but I have had no personal experience of it.

Beraneck's tuberculin.—This tuberculin is composed of extracellular toxins of the broth culture of special formula and of intracellular toxins extracted from the protoplasm of the bodies of the bacilli with 1 per cent. phosphoric acid. It should contain as far as possible all the substances having immunising properties, whether in the culture fluid or in the bacteria themselves, but without the other harmful toxins.

The therapeutic effect of this tuberculin depends on its active immunising effect, and on a gradually raised resisting power to the toxins. Results by many clinicians are favourable, and in cases of early pulmonary disease in conjunction with sanatorium treatment I have had excellent effects from this tuberculin. It is easily administered, and in my hands I have never observed any marked reactions.

Bovine tuberculin.—The result of the teaching of Koch as to the difference between human and bovine tubercle bacilli has led me to use a tuberculin prepared from bovine cultures, and made in exactly the same way as Koch's tuberculin R. As far as I know, the first bovine tuberculin used in this country was made from my own cultures which I grew in the laboratory, and which were prepared and standardised by the Clinical Research Association. I use bovine tuberculin only in cases of consumption, because this is an infection by the typus humanus, whilst in other forms of tuberculosis I use a tuberculin prepared from human sources (Koch's tuberculin R.).

METHOD OF TREATMENT.

It is preferable (though not necessary) that the patient should stay in bed a few days before and after the first injection. The temperature and pulse should be noted every four hours before treatment, and if not above 100° F. at any time the first injection of 0·0001 milligramme may be given under the skin, with, of course, the strictest aseptic precautions. The temperature and pulse should be taken every two hours afterwards for 24 hours, and then every four hours for 48 hours more. If any reaction is going to take place the temperature will rise up to 100° or 101° within the first 12 hours or even later; but experience has shown that if the injections are commenced with such a small dose and slowly and gradually increased no reaction follows, and beyond an occasional slight headache or feeling of sickness no disagreeable symptoms are observed. In fact, many patients visit the consulting-room for their injections every week and continue their ordinary duties in the interval without any personal inconvenience. The second injection of 0·0002 milligramme is given after an interval of one week, provided no reaction has followed the first injection, in which case the first injection is repeated and then doses (in milligrammes) in the following order: 0·0004, 0·0005, 0·0025, 0·003, 0·004, 0·005, 0·0075, and 0·01 (maximum dose), making in all 12 injections. If the patient requires further injections the last injection of 0·01 milligramme is repeated for a few more doses, but that dose is never exceeded. After the first two or three injections the patient generally feels better, the temperature drops to normal, the appetite is improved, and there is a feeling of general improvement. Not even the slightest bad effect has been observed from the injections, but, of course, great care must be exercised in the technique, and a careful watch must be kept on the doings of the patient during the course.

Many of us had experience of the tuberculin introduced to the profession by Professor Koch 16 years ago. It was used in a great many cases of phthisis and other forms of tuberculosis without discrimination, but it was soon found that the most marked effects of the tuberculin were produced by injecting it in cases of lupus. I well remember, after obtaining it with great difficulty, injecting several cases of lupus. The reaction was terrific, and from notes from one of my cases I find that the temperature ran up to 105°, the pulse 140, whilst the inflammatory reaction on the lupus itself was most intense. The patient complained of a hot, parched, burning sensation all over his body; in fact, felt he was going to die. In the course of five days he developed acute tuberculous meningitis, and died within a week. Although I had no other fatal cases, yet in most of them the reaction was acute and in some alarming. In four cases of phthisis in which I used it the patients were made rapidly worse; in fact, the effects were so serious that the remedy was very quickly dropped by the profession. We now know that the only fault of the tuberculin was its dosage. It was a powerful remedy, and too large a dose was administered without the slightest scientific knowledge as to its action. At the present time the effects of tuberculin are produced by the administration of minute doses with careful observation as to the effects of each dose. The tuberculin is slowly increased in strength, thus gradually immunising the patient to it until by degrees a maximum dose of 1-100th part of a milligramme is administered.

I now proceed to relate the particular cases in which tuberculin has been used, and although it is impossible to enter into details in this short lecture, yet I will endeavour, as far as possible, to classify the different groups of cases with their results.

TUBERCULIN DIAGNOSIS.

We have in tuberculin a very certain and simple method of deciding whether or not a person is suffering from tuberculosis. The four chief methods of employing it are as follows: (1) conjunctival test (Calmette); (2) cuti-reaction (von Pirquet); (3) Moro's ointment method; and (4) injection of tuberculin.

The first method, introduced by Calmette, consists of placing a drop or two of tuberculin in the eye and watching for the development of a mild conjunctivitis. This is a simple and useful way of making the test, but unfortunately it had its drawbacks in the fact that occasionally it produced a purulent conjunctivitis, which was disagreeable although not dangerous, and in some advanced cases it failed to give a satisfactory result. I have now quite abandoned this method.

The second method, introduced by von Pirquet of Vienna, is a really useful and reliable test. It consists of simply scratching the skin and dropping on a drop or two of tuberculin of fair strength in much the same way as vaccination. If the patient is tuberculous an erythematous blush around the margin of the scratch makes its appearance in a time varying from one hour to 24 hours according to the severity of the attack. As a general rule the reaction appears in six or eight hours, and may last for two or three days or even a week. Although, as a rule, the reaction is a mild one and often unnoticed by the patient, yet I have had four cases in which a very violent reaction followed, with high temperature and a hard brawny cellulitis extending to the axilla in three cases and in one case even suppuration. In my experience a very large number of persons have received a mild infection of tubercle, which causes no symptoms, such as caseating mesenteric glands or bronchial glands, or even undiscovered phthisis. These persons will give a positive cuti-reaction, although no active lesions are noticed. A positive reaction, therefore, is, although confirmatory of suspected tubercle, of no more value, but a negative reaction is of great value in excluding tubercle altogether, and I have found this test to be remarkably certain and reliable.

With a view of endeavouring to diagnose the exact nature of a tuberculous infection, we have been using both human and bovine tuberculin for the cuti-reaction as first recommended by Detre of Vienna. In every case now we use human tuberculin on the right arm and bovine tuberculin on the left arm, with a control test on each. The suggestion is that a bovine lesion would cause a reaction to bovine tuberculin and *vice versa*. I have been assisted in this work by Dr. E. L. Williamson, one of the resident medical officers of the hospital, to whom I am greatly indebted, and we find that out of 114 cases in which the double test was made cases of phthisis which are human infections almost invariably react to human tuberculin and occasionally also to bovine, but that cases which react to bovine tuberculin invariably react to human also. I do not understand the exact significance of this, but I think that as a general guide to diagnosis this test is of some importance, but further work is required before certain deductions can be drawn.

The test suggested by Moro of rubbing a little ointment containing tuberculin into the skin is simple and fairly reliable. It produces a small crop of papules near the scratch and a little irritation. This test is suitable for children.

Injection of tuberculin for the purpose of diagnosis is now rarely practised and is not altogether free from danger.

RESULTS OF TREATMENT.

Tuberculous glands.—61 cases of tuberculous glands in the neck and elsewhere have been treated with human tuberculin with very astonishing and excellent results. The ages of the patients have been from 3 months to 43 years, and in all the cases a history of drinking cow's milk, sometimes in large quantities, has been obtained. In my opinion, nearly all tuberculous glands in the neck are caused by absorption of bovine bacilli through the tonsils, fauces, or carious teeth. If the infection is a mild one, perhaps only one gland is involved; if severe and long-continued, the whole of the glands in both triangles in the neck may be infected, extending even

Von Pirquet Reactions.

No.	Age.	Diagnosis.	Von Pirquet. Human.	Von Pirquet. Bovine.
1	17	Enteric fever.	Negative.	Negative.
2	57	Debility.	Positive.	Positive.
3	45	Tuberculous laryngitis.	,,	—
4	24	Bronchiectasis.	Negative.	Negative.
5	24	Pulmonary tuberculosis.	Positive.	—
6	22	,, ,,	,,	—
7	6	Adenitis, neck.	,,	Negative.
8	34	Pyelitis.	Negative.	,,
9	24	Pleurisy.	,,	,,
10	24	Sluggish sinus following wound of arm.	,,	—
11	13	Tuberculous peritonitis.	Positive.	—
12	21	Epilepsy.	Negative.	—
13	28	Pneumonia.	,,	—
14	24	,,	,,	—
15	17	Pulmonary tuberculosis.	Positive (marked).	Positive (faint).
16	40	,, ,,	Positive.	—
17	17	,, ,,	Positive (faint).	Negative.
18	40	,, ,,	,, ,,	—
19	42	,, ,,	Positive.	Positive (faint).
20	21	,, ,,	,,	,, ,,
21	31	Pleurisy.	,,	Negative.
22	60	Pulmonary tuberculosis.	,,	—
23	19	Bronchitis.	,,	—
24	57	Rheumatism.	Negative.	—
25	19	Enteric fever.	,,	—
26	7	Debility.	,,	Negative.
27	31	Pneumonia.	Positive.	—
28	18	Pulmonary tuberculosis.	,,	Positive.
29	6	Bronchitis.	,,	—
30	8	Pneumonia.	Negative.	—
31	—	Pulmonary tuberculosis.	Positive (faint).	Negative.
32	—	Pneumonia.	Negative.	,,
33	—	Addison's disease.	Negative. / Positive (faint).	Negative (18/11/09). / Positive (faint) (19/11/09).
34	—	Bronchitis.	Negative.	Negative.
35	—	Ulcer of thigh.	Negative. / Positive (6/12/09).	Negative (29/12/09). / —
36	23	Bronchitis.	Negative.	Negative.
37	18	Pulmonary tuberculosis.	Positive.	Positive.
38	47	Enteritis.	Negative.	Negative.
39	53	Bronchitis.	Positive (faintly).	,,
40	30	Pleurisy.	Positive (marked).	Positive (faint).
41	22	? Enteric fever.	Positive.	Positive (more marked).
42	40	Enteric fever.	Negative.	Negative.
43	60	Pneumonia.	,,	,,

directly down to the axillæ and chest wall. It is important to remember that these glands may extend down directly to the apex of the lung, setting up an acute tuberculosis of the lung, which I call "bo-phthisis," and which may be indistinguishable clinically from ordinary phthisis. I have notes of 23 such cases where the primary infection was in the neck glands, extending directly to the apex of the lung and pleuræ of both sides.

I am always very careful to try to discover if any suppuration is present in glands before giving tuberculin. If the glands are actively caseating and suppurating tuberculin does no good and even in some cases may do harm. In these cases the caseating glands should be incised and packed with thymol or iodoform, or, if possible, excised *en masse*. When these glands have been dealt with the course of tuberculin should be given, together with the usual fresh-air treatment and cod-liver oil, &c. In the great majority of cases the glands rapidly reduce in size and in the course of a few months almost disappear.

Although glands in the neck are usually primary, I have seen three instances where a general tuberculous infection has rapidly spread upwards from the abdomen, through the diaphragm to the bronchial glands, thence to the lungs, and directly upwards to the glands in the neck, terminating fatally soon afterwards. If the neck glands spread downwards on to the chest wall, involving the superficial pectoral glands and even the axillæ, the case generally does well and tends to recover, but if the deep mediastinal glands are affected, then the process spreads to the lungs and the result is very unfavourable.

I am strongly averse to extensive dissections in the neck with the object of clearing out all tuberculous glands. The caseating or suppurating glands should always be opened or removed, as they are a source of danger, but the glands which are not caseating will nearly always disappear after a course of 12 or 15 injections of tuberculin. I look upon glands in the neck as the most favourable lesions for treatment with human tuberculin.

Tuberculosis of the uterus and Fallopian tubes.—Although I have made careful post-mortem examinations of 876 females between the ages of 15 and 60 years who have died from pulmonary tuberculosis, I have never met with a single case where the generative organs were attacked by tubercle. I have met with 16 cases of tuberculosis of the Fallopian tubes post mortem, and in 5 the cause of death was general miliary tuberculosis. In the remaining 11 cases death was from other causes.

In my opinion, tuberculosis of the female generative organs and bladder is the result of direct extension from a tuberculous focus within the abdomen, and is of bovine origin. Support is given to this view from the fact that these tuberculous lesions respond most favourably to treatment by Koch's tuberculin, as of course do all other forms of surgical tubercle.

I have treated 17 cases of tuberculous salpingitis with injections of Koch's tuberculin, having previously had the tubes removed by operation, and the results have been most gratifying. In fact, several of them have been completely cured, with increase of weight and loss of all symptoms, although in five cases the bladder was involved. I have just seen a case of a woman who, at the time of operation for tuberculous tubes, was found to have extensive tubercles scattered over the intestines and mesentery. After four months' treatment with tuberculin she made a complete recovery and gained 28 pounds in weight.

Genito-urinary tuberculosis.—Tuberculosis of the genito-urinary apparatus seems to respond well to tuberculin treatment, and of 26 cases which I have had under treatment 14 seemed to receive lasting benefit, whilst 12 unfortunately progressed. Of course, many of these cases were advanced on admission to hospital, but in early cases they respond well to treatment. A tuberculous testicle should always be removed, as by remaining it is liable to be followed by acute generalised tuberculosis. Tuberculous kidneys should not be removed unless suppuration is present, as they improve and often remain useful organs after tuberculin treatment. Tuberculous ulcers in the bladder are often very intractable, and may require some surgical interference as well as tuberculin, but they sometimes heal altogether without operation.

Tuberculous meningitis.—In my opinion, and as the result of very extensive investigation, *all* cases of tuberculous meningitis, together with gross tuberculous deposits in the brain, are due to bovine infection from milk. I have had under my care 207 cases of tuberculous meningitis, and in every case the child has been fed on cows' milk. I have never seen a case of tuberculous meningitis which had only been fed on its mother's milk, and, what is more remarkable, out of over 4000 cases of ordinary phthisis I have never seen one of them develop tuberculous meningitis in the course of their disease. Cases of gland or bone disease which develop symptoms of meningitis in hospital can sometimes be arrested by a few timely injections of tuberculin, and I have certainly seen two children who were undoubtedly developing meningitis make a rapid recovery after such treatment. It is my routine practice now to treat every case with tuberculin, as otherwise the disease is always fatal.

Tuberculous joints.—I am convinced that the less we do in the way of surgical interference in joints the better chance there is of recovery—absolute rest and fixation, with fresh air, &c., constitute the best possible treatment. If abscess is present the pus may be aspirated repeatedly, but always,

if possible, drainage should be carefully avoided. In cases of abscess in bone it ought always to be opened and evacuated, as it is highly dangerous to leave it on account of danger of general miliary tuberculosis. In all these cases where there is no reason to suspect the presence of pus I carry out this treatment together with injections of tuberculin, and generally with excellent results.

Tuberculous peritonitis.—I have now treated 28 cases of tuberculous peritonitis in patients varying from 3 to 37 years of age. I consider that tuberculin is an absolute specific in cases of tuberculous peritonitis where the disease is confined to the abdomen. Of the 28 cases 19 have been discharged quite recovered, 6 were much better, and 3 died. If there is an excess of fluid the abdomen should be opened and drained, and the escape of the fluid is generally followed by rapid improvement, and in some cases by complete recovery. I generally give these cases about 20 weekly injections of tuberculin, watching the effects very closely.

Tuberculous abscesses and sinuses.—The unsatisfactory element in the treatment of sinuses and abscesses is the presence of a mixed infection. We are now treating these cases with staphylococcic vaccines corresponding with the patient's own discharges in a great many cases with good results. Then we give tuberculin, with the happy result that the sinuses close up and healing follows in a large proportion of cases. If waxy disease be present I never give tuberculin.

Lupus.—44 cases of lupus have been treated with the most excellent results. In two cases where the lupus recurred death took place some months afterwards from general tuberculosis of a miliary type, involving the lungs apparently by direct lymphatic extension from the neck. I have never seen a case of phthisis develop lupus, and in my experience lupus is a primary infection which may remain chronic for many years and then terminate in a general tuberculosis which carries off the patient. I am also of opinion that lupus is *always* of bovine origin, and may be conveyed by infection from person to person.

CONCLUDING REMARKS.

In conclusion, I do not for one moment think that tuberculin is a cure for all forms of surgical tuberculosis, but in my experience it is the best treatment we have to-day. It often has to be associated with surgical procedures, and the intelligent coöperation of the physician and the surgeon will often bring about a gratifying cure. I feel sure that extensive and radical operations for tuberculosis are not good, and in the case of psoas abscesses and spinal caries will often induce a blood-stream infection, followed by general miliary tuberculosis and death. In all cases where possible, pus should be removed aseptically by aspiration and not by drainage, at the same time replacing the pus by thymol or some other emulsion. It may be necessary to aspirate tuberculous abscesses as many as 20 or 30 times, but in time, under general hygienic conditions, the infection expends itself and a permanent cure results. What we want to avoid in all tuberculous lesions is a secondary infection with other pathogenic organisms, and this is difficult to avoid if there is an open wound.

It may be necessary to treat some tuberculous cases for many years before a cure results, but, fortunately, cases are now treated earlier than they were, and amputation of limbs is very rarely resorted to. In some cases this is the only course open to the surgeon to save life, as by completely removing a virulent focus the patient is enabled to recover and rapidly get fat and well. Excisions and erasions of joints will, I think, soon be a thing of the past, and I look forward with hope to the time when all tuberculous infections will be treated in the earliest stages of the disease by specific remedies which will prevent them drifting into multiple lesions and secondary infections for which little can be done in the way of a permanent remedy. I look upon tuberculosis as a most docile and willing disease to be cured, and if we could only induce our patients to undergo treatment at the earliest manifestation of the disease in the body, our results would not only be more gratifying but a vast amount of suffering and disfigurement would be spared.

UNIVERSITY OF OXFORD.—The electors have elected Mr. Ernest L. Kennaway, B.M., M.A., Hulme Research Student of Brasenose College, to the Radcliffe Travelling Fellowship.

THE ABDOMINAL WATERSHEDS AND THEIR INFLUENCE ON THE LOCALISATION OF INTRAPERITONEAL INFECTIONS.[1]

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LOCALISED intraperitoneal suppuration is a condition which is of interest and importance to physicians and surgeons alike, for the formation of the abscesses is often insidious, and upon their accurate localisation and efficient treatment the life of the patient in many instances depends. With the evolution of abdominal surgery during the last 10 or 15 years a great advance in our knowledge of these conditions has occurred. The abdominal lesions which they are most likely to complicate are known, the fact that these abscesses are nearly always due to intra- and not to extraperitoneal extension of infection is recognised, and the customary highways along which the pus travels and the localities in which it tends to collect have been mapped out.

When the body is supine the peritoneal cavity is subdivided by definite bony prominences. One of these is longitudinal, and formed by the projection of the bodies of the vertebræ. Another is more or less transverse, formed on each side by the brim of the true pelvis and the psoas muscle which rests on it. These projections, which may be called the watersheds of the peritoneum, play an important part in directing the course of purulent infections within the peritoneal cavity. The course of the effusions is further determined and limited by the various mesenteries and folds formed by the peritoneum itself. Of these structures the tranverse mesocolon is the most important, since in conjunction with the great omentum it forms a shelf which in great measure shuts off the subdiaphragmatic spaces from the rest of the abdominal cavity. The most extensive forms of subdiaphragmatic abscess have as their lower boundaries adhesions between the omentum and colon on one hand, and the abdominal wall on the other. The mesocolic shelf not only separates the subdiaphragmatic regions from the rest of the abdomen, but also, by virtue of the median prominence formed by the spine, tends to direct effusions poured out on its upper surface, either towards the region of the right kidney or else towards the left, into that part of the greater sac which contains the stomach and the spleen.

The importance of the part of the vertebral watershed which lies above the transverse colon is great, for either on its summit or on its right slope lie the pylorus and the commencement of the duodenum, whilst on the left slope rests the body of the stomach. Its right declivity is also in close relation to the gall-bladder, the bile ducts and the under surface of the right lobe of the liver.

The watershed formed by the right segment of the brim of the true pelvis probably surpasses, or at all events equals, the upper lumbar projection in importance. Near the summit of the pelvic ridge or on the surface which slopes away from it towards the right loin, the appendix will usually be found; occasionally it hangs over the pelvic side of the ridge in a position to infect the pelvic cavity alone.

When a purulent infection begins to descend the declivity which slopes from the pelvic ridge towards the right loin it naturally tends to travel alongside the ascending colon which lies on this slope. The colon, being usually more or less distended, divides the slope into two gutters, to which the names external and internal paracolic grooves have been applied. Of these gutters the external, which lies between the colon and the lateral abdominal wall, leads direct to a well around the head of the right kidney. To this well also the mesocolic slope tends to direct effusions poured out in the upper part of the abdomen. Thus the right renal well or subhepatic pouch is of importance, not only in connexion with lesions in the upper part of the abdomen (stomach, duodenum, liver, gall-bladder bile-ducts, &c.), but also with the more common

[1] An Address delivered before the Bromley Medical Society on Feb. 8th, 1910.

inflammatory lesions of the appendix. Ascending infections may not only infect the right renal well, but tend to make their way between the left lobe of the liver and the lateral wall of the abdomen into the right subphrenic space.

The descent of fluid from the pelvic watershed along the external paracolic groove is not always unobstructed. Not infrequently a fold of peritoneum crosses this gutter and obstructs it. The fold may be well developed, so that the lower part of the right lobe of the liver is supported by it in exactly the same way that the costocolic fold supports the spleen. In such a case the fold is high up; a more common situation is that indicated by Jenkins and Maynard Smith, in which the fold passes downwards and inwards from the right flank at the level of the iliac crest to be attached to the commencement of the ascending colon above the cæcum. Sometimes multiple small septa instead of a solitary fold pass between the cæcum and the parietes of the flank. When a well-marked fold is present a purulent collection, instead of reaching the right kidney well, will be circumscribed in the right iliac fossa external to the cæcum and ascending colon.

Should an ascending infection take the route offered by the internal instead of the external paracolic groove it may descend under the influence of gravity until its progress is arrested by the under side of the hepatic flexure of the colon, or it may cross the latter if not very prominent and so gain access to the renal well. Mainly because the posterior abdominal wall slopes abruptly away from the prominence of the spine towards the flank, but in part also on account of the line of attachment of the mesentery of the small intestine which crosses obliquely from the left side of the second lumbar vertebra towards a point in the right iliac fossa, collections travelling on the inner side of the ascending colon may keep fairly well to the internal paracolic groove, but at times they do diffuse themselves in the labyrinth formed by the plications of the mesentery and coils of small intestine, a condition which adds considerably to the gravity of affairs.

FIG. 1.

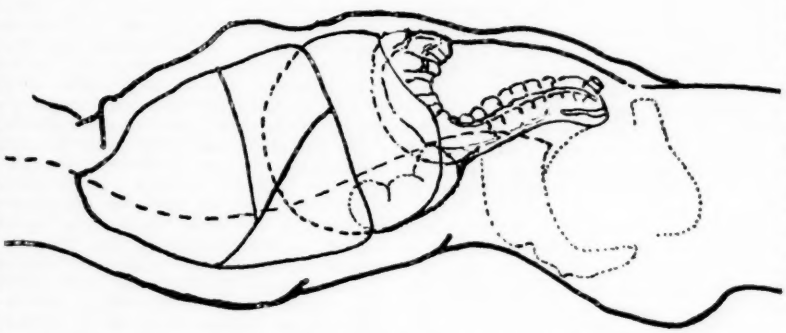

Diagram showing the slope from the right half of the pelvic watershed (appendix region) towards the right renal well, also the relation of the forward projection of the lumbar spine (longitudinal interrupted line) to the same well. The relation of the right dome of the diaphragm to the base of the right lung is indicated.

FIG. 2.

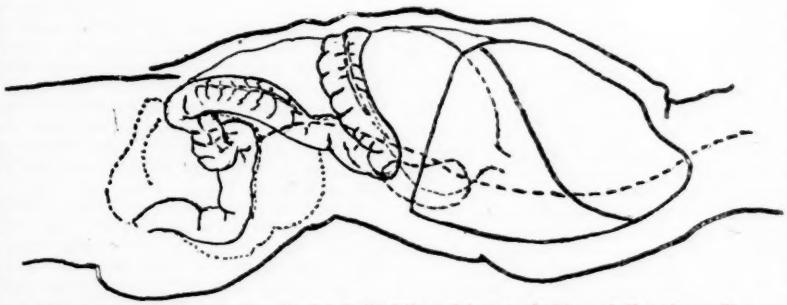

Diagram showing the slope from the left half of the pelvic watershed towards the spleen. The relation of the left dome of the diaphragm to the lower lobe of the left lung is also indicated.

Intraperitoneal infections are uncommon on the watershed formed by the left pelvic brim. Just on the pelvic aspect of this ridge is the situation occupied by carcinoma of the ilio-pelvic colon (sigmoid), but suppuration does not often occur in connexion with this, and is as a rule circumscribed. Suppuration may also occur on this watershed in connexion with inflamed diverticula of the large bowel or infected ovarian cysts. The highway mapped out by the descending colon is, however, of great importance, in that it may in some cases afford a route by means of which suppurative infections travelling from the pelvis can reach the upper part of the abdomen; and conversely, infections of the left subdiaphragmatic region may travel along it to the lower parts of the belly. In the left lumbar region internal and external paracolic grooves may be observed just as on the right side, but the gutters are often narrow, since the calibre of the colon on the left is frequently small owing to tonic contraction.

The external paracolic groove of the left side is more or less completely shut off from the left subdiaphragmatic region by the costocolic fold, which passes from the splenic flexure of the colon to the inner aspect of the diaphragm opposite the eleventh rib. This fold is formed from, and continuous with, the left margin of the great omentum. When it is ill-developed purulent collections may overtop the dam which it forms; this I have observed several times.

The left internal paracolic groove widens out in its upper part into a fossa, which is bounded to the right by the projection of the lumbar spine, to the left by the descending colon, and above by the concave aspect of the splenic flexure. The fossa is covered in by the back of the mesentery and by the great omentum, which must be turned aside to expose the space. The deepest and, in the supine position, most dependent part of this fossa lies in the splenic flexure, external to the duodeno-jejunal junction.

Should pus overflow from the fossa and succeed in crossing the splenic flexure it will gain access to the left subphrenic space. The lower and narrow end of the left internal paracolic groove communicates over the pelvic ridge (sacro-iliac joint) with the cavity of the pelvis on the mesial aspect of the pelvic mesocolon, which directs any effusion into the recto-vesical or the recto-uterine pouch.

Having briefly reviewed the tracks commonly followed by intraperitoneal infections, we may consider more closely the anatomical boundaries of the recesses in which the pus finally tends to accumulate and the signs which are diagnostic of its presence at these spots. Above the mesocolic shelf there are three situations in which suppuration may occur. First, the pus may lie in the right dome of the diaphragm constituting the true right subphrenic abscess. Secondly, it may lie in the left dome, occupying part or all of the space known as the stomach chamber; this is the left subphrenic abscess, sometimes called perigastric or perisplenic from the relations it bears to the stomach and to the spleen. Thirdly, pus may lie below the right lobe of the liver in the recess known as the right renal well, right kidney pouch, or subhepatic fossa. When the purulent collection is very extensive its distribution may be widespread, so that all these localities are simultaneously involved.

The rupture of a gastric or duodenal ulcer which happens to lie near the ridge of the median watershed not infrequently

causes diffuse infection, the extravasated gastric contents passing over the front of the liver into the right dome of the diaphragm, over the anterior surface of the stomach into the left dome, and along the upper surface of the right half of the mesocolon into the right renal well. They may also pass down over the front of the omentum, which shields the small intestine, direct into the pelvis. This latter mode of infection is likely to occur if the patient sits or stands up.

The right subphrenic abscess.—The signs of a large abscess in the right subphrenic region are partly abdominal and partly thoracic. The respiratory movements of the epigastric and right hypochondriac regions may be annulled and this part of the belly wall may be rigid or even bulging. Distinct tenderness is elicited by palpation and, in abscesses of some standing, a definite inflammatory ridge, due to omental and colic adhesions, may be felt at the lower limit of the collection. When the left limit of the abscess is formed by the falciform ligament of the liver a sharply defined edge, bulging a little towards the left, may be made out in the position of this fold.

The thoracic signs are: restriction of the respiratory movements of the lower part of the chest on the right side; the presence of percussion dulness in the lower axilla rising posteriorly as high as the angle of the scapula; diminution of vocal fremitus and resonance over the dull area with more or less suppression of the breath sounds, which, although faint, may have a distant bronchial character. Distinct tenderness over the lower axilla is, if present, a valuable sign, as also is bulging of the lower thoracic zone on the affected side. Friction having a respiratory rhythm may sometimes be heard over both abdomen and chest, even when the inflammation is strictly limited to the under surface of the diaphragm.

Should the abscess contain gas, which is very apt to occur since the common cause of a large subphrenic abscess is rupture of a gastric or a duodenal ulcer, the signs are modified. The imprisoned gas moves in the same way as the air bubble in a spirit level, and always tends to occupy the highest position in the abscess cavity. Thus in such an abscess with the patient supine the signs of gas are to be found in front, obliterating the liver dulness in this position, but when the patient is turned on the left side the gas slowly shifts into the right axilla and the resonance in front is replaced by dulness due to fluid. These signs are most pronounced when the falciform ligament forms a sharp left boundary to the collection; occasionally gas is found on one side of it and fluid on the other. The percussion note over imprisoned gas is tympanitic; a coin sound is easily obtained, and an amphoric or echoing quality may be imparted to neighbouring sounds produced by heart or lung.

The meaning of the signs obtained over the lung base in subphrenic abscess calls for some consideration. The presence of percussion dulness, with impairment of vocal fremitus and faint bronchial breathing, naturally suggests the occurrence of an effusion into the pleura or the presence of fluid masking pulmonary consolidation. No doubt in cases where the abscess has escaped detection, and even in some where it has been evacuated, acute pleurisy, empyema, or lung consolidation may be present, but this may not be the case even when the signs mentioned are well marked. I have no doubt that in the earlier stages of the disease at all events the lung signs are due to collapse of the lower lobe in consequence of inactivity of the diaphragm. In several cases where the pleura was explored I have seen the dark and retracted, inactive lower lobe without any signs of pleurisy. Dr. W. Pasteur in an instructive paper on Massive Collapse of the Lung has made some interesting observations on this subject. Short of exploratory puncture of the pleura it is difficult to formulate distinctive signs between massive collapse and effusion, but I am inclined to think that if dulness, bronchial breathing, and tenderness are well marked in the axilla as well as at the back the evidence is against collapse pure and simple.

The diagnosis of such abscesses as we have been considering is a matter of no great difficulty. The antecedent history is usually, although not invariably, that of an abdominal catastrophe. The presence of signs of disease in the upper part of the abdomen indicates that the abscess is subphrenic. When the gas-containing abscess is present the fact that the characteristic signs occur well below the costal margin is sufficient to exclude pneumothorax.

But a subdiaphragmatic abscess is not always of great size, and it may lie so deeply in the dome of the diaphragm that the signs of disease in the epigastric and hypochondriac regions are absent or scanty. Small collections of this nature may occur as sequels of appendicitis or in connexion with suppuration of the pelvic viscera. The ascending infection tracks up the loin until it reaches the lower edge of the liver, and then, passing between this and the parietes, infects the subphrenic space. The right renal well may be infected at the same time.

In such cases there is usually a history of acute abdominal symptoms succeeded by a period of quiescence, which in turn is succeeded by the development of fresh febrile disturbance, wasting, sweats, and other signs of purulent infection. As the abscess above the liver increases it tends to displace the diaphragm upwards and produces equivocal signs at the base of the right lung. Sometimes the liver is so depressed that its edge may be plainly felt, but should adhesions form between the liver and parietes before much pus has collected the downward displacement may be insignificant.

The lung signs, coupled with the evidence of sepsis, cause the condition to simulate empyema very closely. Here, as in the other form of abscess, the occurrence of localised bulging and œdema in the lower part of the thorax is an indication that the collection is subphrenic. The presence of a dome-shaped upper limit to the dull area has a similar significance, but unfortunately this outline may be concealed by the development of a secondary pleural effusion. When the X rays are available they may assist in ascertaining the relation of the effusion with regard to the diaphragm.

The use of the aspirating needle through the lower intercostal spaces for the detection of the pus is open to many fallacies. A serous effusion may be withdrawn from the pleura and the abscess under the diaphragm overlooked; the abscess may be found, supposed to be an empyema and treated as such, greatly to the patient's detriment; the effusion on the surface of the liver may be thick, plastic, infected lymph of which the needle gives no indication. Examination of both the pleural cavity and the subdiaphragmatic region by means of rib resection offers the best chance of success in difficult and obscure cases. But, after all, the history of the onset is of paramount importance as a guide to the condition of affairs. It should also be remembered that liver abscess itself may be a cause of subphrenic suppuration and, exceptionally, the space is infected by primary suppuration in the lung or pleura.

CASE 1. *Right-sided salpingitis and suppurating ovarian cyst; ascending infection of the right subphrenic space.*—An inflamed right ovarian cyst and inflamed right tube were removed by abdominal section from a woman aged 39 years. Pyrexia continued and offensive fluid escaped through the drainage-tube. Nine days after operation cough was noticed and examination of the chest showed dulness at the base of the right lung. The lung was supposed to be consolidated and empyema was feared. Three weeks later the patient presented all the signs of fluid low down in the right axilla and to a lesser degree posteriorly. The axilla was tender over the dull area. Exploration was undertaken. Resection of the tenth rib and examination of the pleura showed that no pus was present. An abdominal exploration below the right costal margin in front also failed to find anything, but exploration far back and high up in the right flank liberated 10 ounces of pus from between the liver and the diaphragm. The patient made an uneventful recovery.

The left subphrenic, perisplenic, or perigastric abscess.—The left subphrenic abscess, like that on the right, may be extensive or limited. When limited it tends to accumulate around the spleen, bathing its convex or diaphragmatic and also its gastric surface.

These abscesses are in the greater sac of the peritoneum. They lie in that space which has been described by Birmingham as the stomach chamber. This chamber occupies the upper left part of the general abdominal cavity. The stomach when distended completely fills the space, but when it is empty, and therefore contracted, part of the transverse colon also rises into the chamber. The roof of the cavity is formed by the under surface of the left lobe of the liver and in the rest of its extent by the left cupola of the diaphragm, which slopes downwards posteriorly and on the left to meet the floor. The latter, which is constituted by the top of the left kidney, the pancreas, and the mesocolic shelf, is separated from the posterior surface of the stomach by the intervention of the lesser sac of the peritoneum. The

anterior boundary of the stomach chamber is formed by the anterior abdominal wall in the epigastric region.

The most posterior part of the general peritoneal cavity of the left subphrenic region is situate, when the body is supine, near the posterior border of the spleen, to the outer side of the upper end of the left kidney, just about the level of the eleventh intercostal space (Jenkins and Maynard Smith). It is in this direction that effusions from ruptured gastric or even duodenal ulcers are directed by the slope of the mesial watershed and the presence of the mesocolic shelf; here also effusions derived from ruptured splenic abscesses may accumulate.

The localisation of pus around the spleen is considerably assisted by the presence of a well-developed costo-colic fold extending between the splenic flexure of the colon and the diaphragm.

The left subphrenic region may also be infected from below by pus travelling along the left paracolic grooves, especially when the costo-colic fold is ill-developed. We shall also see later that a large collection in the *right* renal well may attain a sufficiently high level to enable it to invade the stomach chamber.

The signs produced by the left subphrenic abscess are so similar to those caused by the right-sided abscess in the corresponding situation that it is unnecessary to recapitulate them. Briefly, in the large abscesses the abdominal signs are prominent; in the small, perisplenic abscesses the lung signs alone may be present. Gas-containing abscesses are common and depend upon perforations of the stomach or duodenum. The stomach chamber being a large space it is possible for abscesses to be limited to various parts of it. As already mentioned, the perisplenic abscess is the common localised collection, but sometimes the pus lies between the stomach and the left lobe of the liver and sometimes above the latter. An abscess between stomach and liver may coexist with an abscess in the right renal well.

The presence of hollow viscera beneath the left phrenic dome renders the use of the exploring needle in this region inadmissible.

The abscess in the right kidney well or subhepatic fossa.—The right kidney well, which when the body is recumbent is the most dependent part of the right half of the general peritoneal cavity, is, as we have already seen, in such a position that it receives effusions which have travelled down the right half of the mesocolic shelf or from the pelvic ridge along the paracolic grooves.

The boundaries of this pouch, described as they appear with the body erect, are as follows. *Above* an extension between the renal surface of the liver and the anterior surface of the kidney reaches as high as the inferior aspects of the right half of the coronary and right lateral ligaments of the liver. *Below* the hepatic flexure of the colon and its attachment to the front of the kidney and duodenum. *Internally* a forward slope formed by the anterior surface of the right kidney and the second part of the duodenum; close to this lies the foramen of Winslow. *Externally* the structures forming the lateral abdominal wall. *Anteriorly* the downward projection of the right lobe of the liver. The lowest part of the well is found to lie (with the body supine) just to the outer side of the superior pole of the right kidney and just below the right lateral ligament of the liver, at the level of the eleventh intercostal space.

The right kidney well may be capable of holding a pint of fluid before it overflows into other parts of the peritoneal cavity. When it does overflow it overflows in certain definite directions. The easiest channel when the pouch has been filled from above is along the right external paracolic groove towards the pelvis. When the colon is distended the external groove is deep and the bowel acts as an internal embankment, but should the bowel happen to be contracted fluid may escape over it and pass down the internal groove. When the well has been infected from below, as in appendicitis, the overflow tends to travel up between the right lateral lobe of the liver and the parietes, and so give rise to an abscess in the right dome of the diaphragm.

There is a third direction in which extension may occur and this is up the right mesocolic slope over the mesial abdominal watershed into the stomach chamber. It is curious how seldom the pus manages to pass through the foramen of Winslow into the lesser sac. The explanation is that the boundaries of this foramen lie in close contact with each other. There is a not uncommon anatomical variation which when present should effectually shut off the approach to the stomach chamber. The variation consists in a shifting forwards of the free edge of the lesser omentum in such wise that a fold of peritoneum extends from the whole length of the gall-bladder above on to the duodenum and transverse colon below.

CASE 2. *Extension of infection upwards from the appendix to the right renal well, and thence to the left pleural sac.*—A youth, aged 18 years, with a history of three weeks' pain in the left side and occasional vomiting, came under observation in a greatly emaciated and septic condition, with dry tongue, rapid, feeble pulse, and dyspnœa. The left side of the chest was distended and motionless; the left thoracic wall was œdematous. The percussion note was dull, vocal fremitus and resonance were much diminished, faint tubular breathing was audible, and also some crepitation. The heart's dulness was displaced to the right and friction with a cardiac rhythm was heard. The abdomen was rigid and tender; over the left half was inflammatory œdema. Four pints of offensive pus were aspirated from the left pleura and a rib resected in the axillary region for free drainage. Death occurred 48 hours later. There was a foul appendix abscess in the right flank. A track of infection led up from this to the right kidney well, where a collection of pus had accumulated; this overflowed under the liver to the left subphrenic region behind the stomach (and therefore must have been in the lesser sac), and finally perforating the diaphragm caused the left empyema. The pericardium was not inflamed. The œdema of the left side of the abdomen and chest was due to cellulitis of the abdominal wall. (I am indebted to Dr. S. J. Sharkey for permission to quote this case.)

The clinical evidence of suppuration in the right kidney well varies with the conditions present. When the purulent collection is accompanied, as it often is, by suppuration in the external paracolic groove of the right side, and also in the right dome of the diaphragm, the signs resemble those already described when speaking of right subphrenic abscess, and it may be possible to determine that the tenderness and rigidity extend lower in the abdomen and that the affected area broadens out towards the right flank, which it extensively involves. But, just as with the true subphrenic collections, there is an insidious and deeply seated form of subhepatic suppuration which is extremely likely to be overlooked. The clinical signs of this form of infection are, in addition to the constitutional symptoms of emaciation, profuse sweating and great prostration, deep-seated tenderness below the right lobe of the liver, the presence on gentle bimanual palpation of the right renal region of an ill-defined swelling which does not move on respiration, and the upward extension of liver dulness in the axilla to the seventh or even the sixth rib instead of to the eighth. This form of abscess, like the deep-seated right subphrenic abscess, is usually caused by an ascending paracolic infection which originates in appendicitis or in the pelvis. Here, again, the history of the original attack is of great importance in diagnosis.

CASE 3. *Right-sided salpingitis and inflamed multilocular ovarian cyst; abscess in right kidney well undetected; death.*—An inflamed right tube and infected right-sided multilocular ovarian cyst were removed from a young woman. Fever continued for three weeks and the patient emaciated. Three weeks later an inflammatory mass could be felt in the upper part of the abdomen on the *left* side. The percussion note was impaired at the base of the left lung and the breath sounds were faintly bronchial. Exploration was advised. The abdomen was first opened and the mass found to consist of dense adhesions. The left pleura was explored and found to be free from infection. Matters did not improve and the patient ultimately died. At the post-mortem examination ten ounces of very foul pus were found in the right renal well and paracolic groove, quite shut off from the general peritoneal cavity.

CASE 4. *Appendicitis; localised abscess in the right kidney well; supposed typhoid fever; evacuation; recovery.*—A man, aged 18 years, came into hospital as a supposed case of typhoid fever. When the history was investigated it was found that the onset was sudden and accompanied by some vomiting. There had also been abdominal pain, at first about the navel and later in the right iliac fossa. His tongue was dry and coated, the pulse of normal rate, the temperature 103° F. The abdomen was slightly distended and the note hyper-resonant. The motions were like pea-soup. No typhoid

spots were found, the spleen was not enlarged, and the serum reaction for typhoid was twice negative. The temperature at first fell and the abdominal tenderness and distension abated. The temperature then gradually mounted again; some tenderness was found below the right costal margin and in the right lumbar region; the upper level of liver dulness in the axilla was two ribs higher than it should be. Aspiration of the chest in the axilla was negative, but incision of the right loin far back evacuated pus from the right kidney well. The liver dulness gradually descended and an uneventful recovery ensued.

To enter into a detailed description of the characteristics and limits of abscesses in the lesser sac of the peritoneum and those in the pelvis would require more time than is available for this address.

The treatment of intraperitoneal abscess is essentially surgical. When there is reason to suspect one of these collections it should be drained. The process of localisation takes from seven to ten days or more. The dangers of secondary diffuse peritoneal infection, of infection of the pleural sac and lung, and of portal pyæmia are always present.

The fallacies which attend the use of the aspirator needle for the diagnosis of subphrenic collections I have already mentioned. The needle, if used, should only be introduced after a close consideration of the history and careful weighing of the clinical signs. It may give accurate information as to the nature of the pleural exudate and quite unreliable indications as to the abdominal condition. It should, needless to say, never be used for puncture below the ribs, nor yet below the diaphragm on the left side. The presence of the liver on the right is in some measure a protection. In a doubtful case where the needle has failed, as it often does, or the patient's progress and symptoms point to suppuration, the boldest course, of exploring by surgical incision, is the safest and most successful in the long run. The most suitable incision varies with the position, size, and apparent cause of the collection.

An extensive right subphrenic abscess, caused by recent rupture of a gastric or duodenal ulcer, is usually explored first from the front on account of the causal lesion. Should the collection be localised posterior transpleural drainage is usually adopted. The ascending subphrenic abscess due to appendicitis, often associated with a collection in the right renal well, may be treated by an incision high up and far back in the flank, but should the subphrenic collection be of any magnitude it is unsafe to rely on the flank incision alone, and better to open the subphrenic space higher up by the transpleural route, steps being taken to shut off the pleural cavity. In one intractable case, complicated by empyema, the condition, which appeared hopeless, was successfully treated by Mr. C. S. Wallace, who excised the ninth rib from the posterior axillary line forwards to the costal margin, a procedure which afforded excellent drainage of the pleura and the whole subdiaphragmatic space.

The left subphrenic abscess is treated on the same lines as the right. The anterior incision may be necessary for the exploration of a perforated stomach, but for a localised collection of pus far back around the spleen the transpleural route should be taken. The locality of the abscess is best exposed by resection of rib, not higher than the seventh.

A point worth mentioning is the position in which patients suffering from appendicitis should be nursed. There is much to be said for the Fowler position, the back being elevated by pillows and the nates supported by a bolster placed transversely beneath the thighs and tied to the bed-frame. This position has the merit of preventing ascending infection, but the state of the pelvis should not be lost sight of, since it favours drainage into this cavity.

Cases of intraperitoneal inflammation well repay careful watching and continued efforts to limit the infection. The first operative procedures are not always successful, but this must not discourage further attempts. Success may only be attained by persistent efforts to reach and drain the various infected localities.

Devonshire-place, W.

THE APOTHECARIES' HALL OF IRELAND.—The quarterly examinations will take place on the following dates:—First professional, Monday, April 18th; second professional, Thursday, April 21st; third professional, Monday, April 25th; and final professional, Wednesday, April 27th.

THE TREATMENT OF PSORIASIS.[1]

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PSORIASIS is one of the most ancient of skin diseases. Naaman the Syrian, commonly called Naaman the leper, probably in reality suffered from this, and the ages have revealed no remedy comparable in swiftness and certainty with the immersion in the River Jordan, which we are told cured him. "Lepra" was the name for certain clinical types of psoriasis until quite recently; Bateman's Atlas, published in 1840, has a plate (No. VII.) of "Lepra vulgaris, the common leprosy," which is certainly psoriasis as we know it. The "leprosy" of the Middle Ages must have been largely composed of psoriasis, and it is sad to reflect how much avoidable misery the victims of this disease must have endured from that unhappy confusion. The sum of suffering for which psoriasis is responsible still remains very great, for it is in our climate, next to eczema, the commonest of skin diseases.

The frequency of its occurrence in a general dermatological clinique may be estimated from the following figures. Of 11,500 cases of general skin diseases recorded in my department at St. Mary's Hospital, 465 were instances of psoriasis—i.e., almost exactly 4 per cent. Dr. Radcliffe Crocker's statistics quoted in his text-book (718 in 10,000 cases) give a much higher percentage; the difference in the two sets of figures may perhaps be accounted for by the fact that in my records care is taken to exclude the entry of the same individual case more than once, recurrent attacks not being recorded.

Psoriasis was included in Dr. Crocker's six diseases of the skin with which every practitioner should be quite familiar. A detailed exposition of some forms of treatment may, therefore, be acceptable to you, for its management requires the utmost patience and resourcefulness on the part of both the patient and the medical practitioner. Inasmuch as its causation remains still completely obscure, it is impossible to devise a rational treatment which would aim at removing the cause, and we are obliged to be satisfied with the teachings of experience as to what remedies are most successful in removing the eruption at any particular time. The pendulum of practice has swung to and fro between the claims of internal and external medication and a combination of both. It may be said that the present methods of treatment are more directed to external than to internal therapeutic measures, the long abuse of arsenic in this disease having produced a reaction, which has perhaps gone beyond its just limit, against all internal treatment.

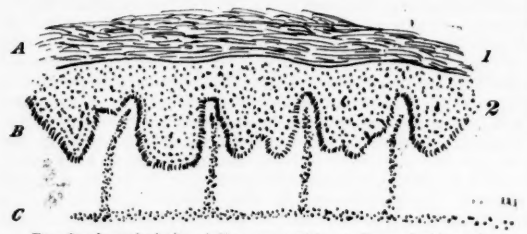
Diagnosis.

A few observations on diagnosis may fitly precede the consideration of therapeutics, which must rely upon diagnosis. Psoriasis is usually one of the least difficult of diseases of the skin to recognise, since it follow such a characteristic and typical distribution and course. Cases, however, in which these are anomalous are not infrequent, and attention to certain points will be of essential aid to the practitioner in forming his conclusions.

Character of the initial lesion.—This is always a papule in its earliest stages, of conical shape, and of the same colour as the surrounding skin, from which it is, however, quite appreciably raised; later the papule becomes pink and enlarges, but retains an outline which is circular, not polygonal as in lichen planus. It is also pinker than the papule of lichen planus, in which a blue tint is added to the red, and than the papule of syphilis, in which a brown shade mingles with the red. What has been described as the "bleeding test" may be applied to the papule at this stage; it consists in gently removing the uppermost scale either with the finger-nail or, better, with a small scalpel; a pink, shiny surface comes into view, and if further removal of epithelium is effected by scratching or otherwise, a number of minute bleeding points are seen. The explanation of this phenomenon probably lies in the histology of psoriasis; the

[1] Paper founded on a lecture delivered at the Medical Graduates' College and Polyclinic.

superficial blood-vessels are dilated, and the increased vascularity accounts for the pinkness of the surface. In the accompanying diagram the position of the first and second hypothetical scratches is indicated by the interrupted horizontal line; the second, by taking off the tops of the papillæ exposes the bleeding blood-vessels from which blood exudes more freely by reason of their dilatation. The papule rapidly enlarges in some cases to form a scaly patch. The scaliness may become enormously exaggerated, as in the so-called psoriasis rupioides, and is always in excess of the scaliness of



Papule of psoriasis (semi-diagrammatic). A, Zone of adherent scales (Parakeratosis). B, Zone of hypertrophied epidermic downgrowth (Acanthosis). C, Superficial plexus of vessels with papillary branches. 1, Position of initial scratch, scales removed. 2, Position of later scratch, papillæ with dilated vessels exposed.

any other skin disease. The scales are white, laminated or stratified, and easily detached from the skin as silvery flakes.

The *distribution* is, in adults, so regular as to afford material aid to diagnosis. The extensor surfaces of the limbs, and especially the skin covering the joints, together with the scalp, may be said to be the typical sites for the eruption to first appear. In children, however, the limbs are quite often free, while the trunk is chiefly affected. The hands and face are generally spared, and the mucous membranes are never in any way attacked. The nails are sometimes implicated by the disease; they become thickened, the free edges brittle, and the enamel of the surface dull; often minute depressions, like the markings on a thimble, appear on the nail, and are very characteristic. The hair is seldom in any way affected; extensive psoriasis of the scalp may coexist with a good head of hair; occasionally, if the scalp is left untreated for long periods, the hair becomes thinned and falls off. The history of family inheritance of the disease and the chronicity and seasonal recurrence of the eruption are features so frequent in psoriasis as to afford when present strong suggestion of this diagnosis.

Treatment.

In considering in detail the therapeutic measures to be adopted in any individual case much will depend on the question whether the patient can remain in bed or is obliged to go about the ordinary avocations of life during his treatment. I propose to deal with treatment therefore under two heads: (1) what may be called ambulatory psoriasis, and (2) "lectual," which is good Latin for "confined to bed."

Ambulatory psoriasis.—Here the patient has to confine his treatment to his sleeping hours and must remain fairly presentable in his person in order to allow of his continuing his daily routine of work. It is important to keep the latter requirement in view and to avoid the risk of disfiguring the exposed parts of the body or to know means of concealing the disfigurement when it is inevitable. The face and hands, and in women who wear evening dress the shoulders and upper part of the chest, will thus have to be specially considered. Local treatment is often difficult under these circumstances, and in such cases internal medication has its most legitimate sphere. But with some ingenuity and care local measures, even including ointments which discolour the skin, may be used even in these positions.

Of all the local applications employed in psoriasis none can compare in efficiency with chrysarobin, which, in spite of all its drawbacks, I never willingly withhold. The methods of applying this are very numerous. Chrysarobin is soluble in chloroform, ether, and benzene, and a saturated solution in the first of these with guttapercha is known as traumaticin. The guttapercha addition forms an adhesive paint which may be used for small isolated patches, especially on the face, but it is the least efficacious, if the most agreeable, method of using this drug. A far better way is to add chrysarobin powder to a fairly adhesive ointment base, such as the following: kaolin levigati ʒii., amyli ʒiv., lanolin. ʒiv., paraffin. fluid. alb. ʒii.; to this is added chrysarobin xv.–xxx. gr. The ointment thus resulting may be applied to the face and the forehead where the hair joins the skin—a very frequent position for obstinate patches of the disease. It should be used at night and removed in the morning either with vaseline or with benzene; the latter is especially useful on hairy parts, and all trace of the ointment should be removed before washing the parts with soap, which in combination with chrysarobin produces purple discolouration of the hair.

The patient must be warned of the danger of conjunctivitis from contact of the conjunctiva with chrysarobin. On the hands the most convenient covering is a pair of cotton gloves, such as Tommy Atkins wears, which may be used again and again. The more the ointment soaks into the glove the more efficacious it becomes. On the covered parts of the body the adhesive ointment mentioned can be left *in situ*, and the proportion of chrysarobin increased to half a drachm to the ounce; it will not come off with mere rubbing, so that the bath need not be prohibited.

For small patches, especially on the face and for resistant patches elsewhere, a very convenient form of application is by the ointment stick—the "Baculum chrysarobini" of St. Mary's Hospital Pharmacopœia: Chrysarobin, 3; white wax, 2; lanolin, 5. These sticks may be made of any required calibre according to the dimensions of the patch to be treated; a convenient thickness is that of a lead pencil. The stick is rubbed on the patch for a few seconds, and the smear thus produced is left for as long as may be possible. The cleanliness of the process and the ease with which the stick may be carried about if wrapped in tin-foil, make this a very suitable form for patients while travelling or on the move.

The ointment used for parts which have to be exposed should always be a weak one containing not more than 15 grains of chrysarobin to the ounce. When inconvenient redness results, as it often does even with these weak formulæ, it may be disguised quite effectively by painting over the reddened area, either with the finger or a brush, a very thin film of Pellanthum, either plain or containing 3 per cent. ichthyol, or a combination of the plain and ichthyolated preparation may be required; when mixed, as one mixes colours on a palette, in suitable proportions, the tint of the surrounding skin may often be very closely matched and the redness quite obliterated. The film may be at once removed by wetting with water, and it is quite harmless to the skin. Before pressing out the contents of the Pellanthum tube it is well to ensure mixture within the tube by gently stirring with a needle; the material exuded should be of a uniform creamy consistence. When the film is too thick it may be thinned with a little water.

Where very obstinate small patches (but not on exposed parts) resist the treatment described, a good method of clearing them (suggested by Dr. A. Whitfield) is to paint the surface with saturated solution of chrysarobin in chloroform, allow the film to dry, and apply over it and a little beyond the margin of the deposit left after evaporation of the chloroform some Leucoplast plaster which is left in position until it comes off, in three or four days, when the process may be renewed.

The disadvantages of the treatment by chrysarobin are not to be ignored, but I am convinced by much experience that most patients are willing to put up with its drawbacks for the sake of the greater rapidity and certainty of its action. It is true that the personal and bed linen become disagreeably stained and that the aspect of the ointment is unæsthetic, but these are minor drawbacks. A more serious one is the risk of producing conjunctivitis when the drug is used in the neighbourhood of the face; this may generally be completely avoided with care, the essential precaution to be taken being to keep the ointment from being conveyed to the eye either by the hands or by continuity with the parts of the face so treated. Where the forehead is affected it is well to apply chrysarobin under a bandage which will keep the ointment in the position desired, for it must be remembered that the movements of the head on the pillow may spread the ointment on the pillow-case, which may then

come in contact with the eye. Or more comfortably a face-mask of lint may be used, with apertures made for the nose, mouth, and eyes, and kept in position by tapes going round the head. In spite of all precautions conjunctivitis sometimes will occur and the drug must at once be omitted and the eye treated with astringent lotion—e.g., acid. borici gr. vi.; sod. sulpho-carbolati gr. x.; aq. rosæ ad ℥ 1.

Psoriasis of the scalp.—Since chrysarobin stains the hair a purple colour it is seldom possible to use it on the scalp, and one has to be satisfied as a rule with less efficacious applications which do not stain hair or skin. Inasmuch as the hair of the head tends to increase the adhesion of the scales, it is particularly important to remove the scales before using any treatment. This may be done with soft soap, of which a pleasant and cleanly method of use is the following. A lotion consisting of equal parts of sp. vin. rectif. and sapo mollis with 15 minims to the ounce of liq. carb. deterg. is rubbed into the scalp with a small sponge, left to soak for half an hour, and washed away with warm water. This may with advantage be applied every night for a week preceding the application of any ointment to the scalp. When the scales have thus been in some measure removed the following ointment may be used nightly, the head being washed about once a week with the soap lotion mentioned: Sulphur. gr. xv.; camphoræ gr. xv.; liq. picis carb. ♏ xxx.; acid. carbol. gr. xv.; resorcin gr. xxx.; adip. benz., paraff. moll. aa. ℥ ss. This treatment is quite pleasant when the hair can be kept short, but becomes difficult in women, who dislike the greasy effect on their hair. For such cases an ointment which can be used at night but readily washed out in the day is better. The following formula suggested by Brocq I have found very useful: Ol. cadin. pur. 50 grammes; ext. quillaiæ 5 c.c.; glycerini amyli 45 grammes; essentiæ caryophylli 2 c.c. Mr. Andrews, the senior dispenser at St. Mary's Hospital, has kindly furnished me with the following notes as to the preparation of this formula: "The extract of quillaia is made by taking 100 parts of quillaia bark; the bark is powdered and is damped with alcohol (49 per cent.) and packed in the percolator. More spirit is poured in till it begins to drip from the bottom. Percolation is then stopped and the mixture is left to stand for 24 hours and then percolated. The first four-fifths of percolate is collected and put aside. Go on percolating with more spirit (49 per cent.) until the drug is exhausted. Evaporate this weak percolate to a soft extract and dissolve this latter in the reserved four-fifths and make up to 100 with more 49 per cent. alcohol. 5 cubic centimetres of this extract are sufficient to emulsify the oleum cadini. The method of mixing it is as follows. The extractum quillaiæ prepared as above is added to the oleum cadini and shaken; the emulsion thus resulting is added a little at a time to the glycerinum amyli in a mortar and rubbed until thoroughly mixed, and, lastly, the oil of cloves is added." This forms a not very unpleasantly smelling ointment which can be rubbed into the scalp and readily removed by washing. It does not stain the hair or the linen permanently. It should be rubbed into the scalp every night and washed out in the morning. Women, however, may use it less frequently as their hair is difficult to dry.

Another formula with oil of cade, somewhat less difficult and cheaper to make, is the following. It is, however, much more evil-smelling than the formula just cited, but is equally efficacious and easily removed by washing. Lard, 50 grammes; potash, 17·50 grammes; aq. dest., 150 grammes. Dissolve potash in water, add to lard previously put in a weighed water bath; mix thoroughly; add 10 cubic centimetres of absolute alcohol. Heat until a soap is formed; add to this 20 grammes of lanolin; concentrate the whole until the weight is 150 grammes; stir till cold and keep in an air-tight jar. Of this base take 20 gr.; add resorcin, 1 gr.; sulph. precip., 1 gr.; and ol. cadini, 5 gr. Mix well.

The disagreeable odour of these remedies may in some cases render their use impossible, and one is obliged to resort to less offensive measures. Of these, mercurial ointments are probably the best; an ointment of calomel 1 part to 3 parts lard; or the ammoniated mercurial ointment with gr. xv.–xxx. of resorcin, or acid. salicylic. may be tried. The possibility of salivation with the use of these strongly mercurial preparations must be carefully borne in mind and their administration stopped on the appearance of any symptoms of mercurialisation.

Where chrysarobin cannot be tolerated.—Occasionally in very acute and itchy cases the application of chrysarobin, even in minimal doses, is intolerable; but it is surprising how seldom it is really necessary on this account to withhold it. Certain patients undoubtedly have an idiosyncrasy of intolerance, and in such cases probably the next best substitute is oil of cade, which may be given in varying degrees of strength, from purity to a proportion of 1 of oil of cade to 8 of olive oil. Oil of cade may also be added to unguentum acidici salicylici in the proportion of one or two drachms to the ounce, and this is a useful formula for very scaly cases. In the more erythematous and itchy cases the oil of cade may be usefully combined with glycerine of starch in the proportion of a quarter to a half of oil of cade, with a few drops of essence of peppermint (about 1 per cent.). In the same manner as was mentioned in speaking of the chrysarobin treatment, the identical dressings should be kept in use throughout; the more they are soaked the better they act.

Oil of cade may also be used in the form of *baths*, and these are especially useful in acute cases. Balzer's formula has been much praised and is an excellent method. Add the yolk of an egg to 50 grammes of oil of cade in a mortar, a sufficient quantity of extract of quillaia to make an emulsion, and 250 grammes of distilled water. This mixture is then added to the bath and the patient is immersed in the water for half an hour.

Another method of using tar baths which I have found useful in acute itchy psoriasis is thus applied. The patient is painted over with the following lotion:—Picis carbonis, 3; sp. vin. meth., 2; ether, 1 (balneum picis, St. M. H.). This is allowed to dry on the body, and the patient is then immersed in a warm bath for half an hour, after which he is carefully dried with warm towels. The same formula may be used with the following addition: Lotion for baln. picis, ℥ vi.; bals. Peru, ℥ vi.; coumarin, gr. xxxvi.; musk, gr. xii. This is painted on the psoriasis patches and left on at night. Salicylic acid (gr. xv.–xx. to ℥ i.) increases its efficiency. The strong odour, which, however, is not altogether disagreeable, makes this method not always easily applicable.

X rays.—Very chronic resistant patches of the disease may be favourably influenced by exposure to X rays for short periods. My experience with this treatment is small and not altogether encouraging, the disease having returned in the site treated very soon after the cessation of treatment.

Other methods of treatment:—

Light baths.—Hyde of Chicago promulgated recently an interesting theory that psoriasis was due to the deprivation of the skin of exposure to sunlight, instancing in favour of this view the comparative rarity of the appearance of lesions on the face and hands, the absence of psoriasis in black races who expose their bodies very largely to the sun, and the improvement of actually diseased persons on treatment with prolonged sun baths. In the great Republic it would appear that tracts of country still remain where man can fish and shoot and live *in naturalibus*, and Hyde reports good results with this resumption of a fig-leaf costume—unhappily, only possible in Arcadian climes. In the only way in which we can imitate this treatment, the subjection of the body to electric light baths, it is probable that much of the effect is due to the heat as well as the light. Turkish baths or Russian baths (dry heat and vapour) are also especially useful in chronic cases where the patient is obliged to lead a sedentary life and rarely perspires freely and in cases where itching is a troublesome symptom. It is probable that one reason why psoriasis usually does better in warm climates than in cold is because sweating is more free, and it should be the object of a patient with chronic psoriasis to sweat all over at least once a week, either through exercise, which is naturally the preferable way, or by means of a hot-air or vapour bath. The home cabinets, of which there are many kinds on the market, offer a quite convenient means of taking these baths and form a useful adjuvant of the ambulatory chrysarobin treatment detailed above.

Spa treatment.—Psoriatics are usually sent to spas where arsenical waters are obtainable, and the treatment consists essentially in the internal action of arsenic. But prolonged immersion in hot water alone seems to be beneficial in certain types of the disease. At Leuk, for example, the psoriatic patients are immersed for several hours a day in the natural

warm spring water of this spa. I have noted good results from the treatment by the Aix-les-Bains douche-massage routine, and Dr. Stanley Rendall has assured me that he is convinced of its efficacy in this disease. Probably the sedative effect of the routine of these watering-places has a beneficial influence on the general health, and thus indirectly on the eruption. The effect of sea-bathing is curiously variable. On the whole, in my opinion the balance swings rather in the direction of harm than good, and the salt water unquestionably increases the irritation of the itchy types. But certain individual cases have apparently benefited by sea-bathing, which is not uncommonly actually prescribed.

Lectual psoriasis.—In all instances where the disease is very acute and extensive, in many where this is not the case, but the patient is desirous of being speedily cleared of his eruption, and whenever it is attempted to produce a final cure, confinement to bed is a most essential part of the treatment. Lately Dr. Norman Walker has suggested the application of chrysarobin all over the body, not merely on the diseased surfaces, in patients who can be kept entirely in bed. I have tried this method in several cases and am satisfied of its value. The point aimed at is the desquamation under chrysarobin of the whole surface and the treatment is kept up until this result is achieved. The patient is wrapped from the neck to the toes in lint thickly smeared with an ointment consisting of half a drachm of chrysarobin to the ounce of vaseline and the lint is kept in position by bandaging. Fresh ointment is applied to the same lint every day until the skin begins to flake off everywhere, the body becoming deeply stained. The psoriasis patches usually resist desquamation longer, and the proportion of chrysarobin may have to be increased on these areas. To cure the actual disease it is necessary that desquamation should occur. When this has happened, and not before, the patient receives a hot bath, fresh clothes are provided, and it is as well to sterilise all the clothes worn previously to the treatment. In using this method the face and scalp cannot generally be included, and these may be treated as mentioned under the heading of ambulatory psoriasis. But the forehead may with careful bandaging be treated by the continuous method, and the scalp in those persons who will sacrifice their hair may with advantage be likewise soaked in the ointment. The average time of detention in bed is four weeks, and the freedom from recurrences may be so prolonged as to amount to actual cure.

I am of opinion that in a first attack, and especially in young patients, it is advisable to attempt this radical method and give the patient the best chance of checking the disease. It is a matter of common observation that the more entirely the last vestige of psoriasis is removed from the body the more protracted are the intervals of freedom between the recurrences: an absolutely complete removal of eruption would probably be attended by an absolutely complete cure. No untoward results have as yet been noted in the course of this treatment. The main precaution to be taken is to avoid contact of the eyes with the ointment, an accident which may easily happen, especially in young people at night. Masks made of lint, with openings for eyes, nose, and mouth, and kept in position with tapes tied round the head, will generally prevent this accident. Similarly, the genital organs, especially of female children, should be protected from contact with the chrysarobin dressings.

Internal treatment in psoriasis.—In no disease has the abuse of arsenic, so commonly and so unhappily regarded as a panacea for all skin diseases, been so general as in psoriasis, and there is undoubtedly a reaction now against arsenic as well as other internal remedies. There is no doubt that in certain cases, in which this result cannot be, however, predicted, it acts with great effect, apparently being alone responsible for the clearance of an eruption. This is especially the case in psoriasis of children and in first attacks. But it cannot be regarded in any sense as a specific for the disease, as mercury, for example, is in syphilis, and the use of arsenic does not prevent the appearance and the spread of an eruption even while the drug is taken in full doses. The danger of giving a patient with an essentially chronic disease like psoriasis a medicine containing arsenic—for the taking of the medicine may become as chronic as the disease—must be borne well in mind. My old teacher, the late Dr. John Cavafy, never felt happy in giving arsenic to out-patients, and there is much to be said for his caution.

More reliance is usually to be placed on external than internal remedies; of the internal remedies arsenic, in spite of its uncertain effect, remains the least uncertain. The drug should be pushed rapidly and stopped if the effect is not produced; from 5 to 15 minims may be given thrice daily, preferably in liquid form, well diluted, and immediately after meals so as to avoid the irritation which may result from its introduction into an empty stomach. Fowler's solution is probably still the best method of administering it. Certain organic compounds of arsenic, such as the cacodylates, and later the arsenates, have had a certain vogue, which is apparently not likely to be permanent, the effects being singularly uncertain and irregular. In the present state of our knowledge the substitution of atoxyl, the most widely used of these preparations, for the older forms is not encouraged by some very serious results which have been recorded of its action. It is difficult to say how far the natural springs containing arsenic in solution owe their effects to the arsenic or to other bodies, including radio-active elements which are found in association. The amount of arsenic as estimated by careful analyses in most of those waters is extremely small and their effect is probably a very mixed one.

Besides arsenic, salicin, mainly through Dr. Radcliffe Crocker's advocacy, has been much used, and with apparently very irregular results. I have personally not been persuaded of its efficacy, and I have given it an extensive trial in doses of 20 grains three times a day, prolonged for many months. Copaiba resin, given in cachets, is very strongly praised by my friend, Mr. Arthur Shillitoe, as efficacious in clearing an eruption. Potassium iodide in very large doses—from 60 to 600 grains per day—has been recommended, chiefly by Scandinavian writers. Thyroid extract in a very few cases, the selection of which seems capricious, acts well, but it is too dangerous a drug to give in large doses as a routine treatment in a chronic disease.

Diet and general management.—The psoriatic is commonly a fresh-coloured robust person. Sir George Humphry indeed described psoriasis as the "hall-mark of health." Many subjects of this disease are, however, nervous, highly-strung persons, and indeed a large body of opinion favours a "neurotic" theory of causation. It is notable that outbreaks of eruption will often coincide with some mental stress, and psoriasis is a common disease in asylums for the insane. The mischievous effect of stimulants in promoting an eruption has often been noted. Long hours of sleep and "the simple life" in general, with plain diet, are the best regimen. It has been thought that vegetarianism is beneficial and Bulkely in particular urges the importance of this combined with a large intake of milk. Opinion, however, is very divided upon the question whether diet really exerts any influence at all, and I am personally no advocate of any special feeding in psoriasis; restriction of alcohol is probably more important than restriction of meat, which is so commonly insisted upon. It ought to be borne in mind by the practitioner that it is nearly always possible to disperse an eruption even if he cannot cure the disease, and the patient must often be helped and encouraged to persevere with treatment by the confident assurance that relief at any rate is within his reach and that the interval of freedom from recurrences will be lengthy in proportion to the completeness of the dispersal of the actual eruption.

Wimpole-street, W.

THE MANCHESTER CONSUMPTION HOSPITAL.—It is now 35 years since the Manchester Hospital for Consumption and Diseases of the Throat and Chest was founded. It began in a small way, and when Sir William Crossley became chairman 30 years ago there were six beds at Bowdon. Now there are 140 at the Delamere Sanatorium, for which Manchester is indebted to Sir William Crossley, and at Bowdon. Still, however, the call is for more beds, as patients are kept waiting so long that the time for successful treatment is sometimes passed before they can be admitted. It is proposed to add 12 beds at Delamere, where there is room for more if the funds could be found. And the cost of a bed, which in the early days of the institution was £1000, is now only £100 or even less. Here, then, is another opportunity for the rich and charitable. The Lord Mayor, Mr. C. Behrens, who has been for many years the honorary secretary of the hospital, was in the chair at the annual meeting on March 14th, and made an earnest appeal for more funds.

ON A CASE OF HEART-BLOCK.[1]

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THE case I wish to bring under notice is that of a tailor, 56 years of age, a small man, 5 feet 1¾ inches in height, and weighing 7 stones 1 pound. He has rather a waxy complexion, but there is generally a slight flush on each cheek, that contrasts with what would otherwise be a pale face. He appears to be a feeble little man, lacking physical power and force. On the other hand, he attends regularly to his business, and this necessitates his standing about all day. He has been married 26 years and has had a large family. Seven are living, six died at birth, and there was one miscarriage. His family history is good; the father is living, aged 81 years, and the mother died when 74 years old; one sister died from phthisis, aged 37 years; and four brothers and three sisters are living.

The patient had rheumatic fever when he was 20 years of age, evidently a severe attack, for he was in bed for six weeks. He states that he got up too soon, and at any rate he had to return to bed for a further period of six weeks with an attack of pleurisy. Ever since this time his left side has been weak and he feels pain in the side on slight exertion. For over 20 years he has been subject to giddy feelings and to some sensations which he calls "turns," lasting a second or so and coming on at any time, even while in bed. During these last he says "he loses himself for a second," and he sometimes flushes—he never becomes pale. About Christmas in 1908 he suffered from very bad "giddy turns" and was compelled to keep in bed. During these attacks he felt that he was sinking away, and on one occasion he thought he was dying. On one day he had as many as a dozen in an hour and a half. He describes himself as sometimes having pains over the præcordium which catch his breath, but only last a second. These pains he distinguishes from other pains in the chest which go through to the back in between the shoulders, and which he himself puts down to indigestion. Whether the præcordial pains are anginal or not, it is difficult to say; they never shoot into the neck or down the arm. For many years he has been short of breath on exertion.

Twelve months ago the patient was first brought to me by Mr. L. Kirkby Thomas, as for some weeks he had been losing strength and energy and the "giddy turns" had been exceptionally severe and harassing. From this time until Easter he had to give up his work and he spent most of the time in bed. Before this he had never had to give up his occupation, although he had often been obliged to stay at home for a day or two. He has now been very comfortable for six months and able to go to business every day. His summer holiday of four weeks was spent at St. Anne's, when he walked every day a number of miles in short and easy stages. His digestion, however, is not good and he has to be careful in his diet.

On examination the cardio-vascular system alone presents any abnormality. In point of size the heart is normal, being if anything rather small. There is no absolute cardiac dulness to be detected in consequence of the emphysematous condition of the lungs, and the cardiac impulse is neither visible nor palpable; this may possibly be due to the same cause. On auscultation the heart sounds are most clearly audible at the apex, but at all the areas they are very weak. The first sound is accompanied by a short blowing systolic murmur, the second being free from murmur. On feeling the pulse one is struck by its extreme slowness, while the force and volume are considerable. On five different occasions during the past 12 months I have found the rate to vary within very narrow limits, being 42, 31, 36, 40, and 42 per minute. The rhythm is not quite regular, but the force of each beat is very constant. The heart sounds are synchronous with the pulse, and there are no sounds audible in the long intervals between the beats. The blood pressure is high. On Nov. 4th, as measured by the manometer, it was equal to 180 millimetres of mercury. The radial arteries are thickened and the brachials pulsating and tortuous. There are no signs of cyanosis or of œdema of the extremities. The urine is free from albumin and sugar, and there is no enlargement of the liver or spleen. The pupils are equal and react to light and accommodation. The knee-jerks are exaggerated.

[1] A paper read before the Midland Medical Society on Dec. 1st, 1909.

It will be seen from the above account that while in this case the history and symptoms would seem undoubtedly to indicate the existence of a severe heart lesion the physical signs show no sufficient evidence of this. The heart is small, the pulse is full and strong, and though there is a systolic murmur audible at the apex, this in itself would not be sufficient to account for the frequent syncopal attacks and persistent dyspnœa on any but the slightest exertion. The most prominent feature is the bradycardia, and this, in conjunction with the symptoms, suggested to my mind that we might possibly have here a case of what is known as heart-block, or perhaps better called Stokes-Adams or Adams-Stokes disease.

By heart-block is meant a state in which, in place of the usual rhythm the auricles and the ventricles contract more or less independently, the disease varying from incomplete heart-block, in which the normal relation is disturbed, to complete heart-block, in which the auricles and the ventricles contract quite independently of each other. The nature of this condition has been clearly established by experiments on the lower vertebrates, of which those of Stannius are the earliest. These experiments consisted in ligaturing, in the frog, the connexion between the sinus and the auricle, known as the first Stannius ligature, and the connexion between the auricle and the ventricle, known as the second Stannius ligature. The result of the first ligature is that the sinus continues to beat, but the auricle and the ventricle, after a pause, begin to beat with a rhythm independent and slower than that of the sinus. The result of the second ligature is that the sinus and the auricle continue to beat as before, but the ventricle, after a pause, begins to beat with its own inherent rhythm, which is slower and independent of that at which the sinus and the auricle are beating.

Recent experiments are those by Erlanger on the mammalian heart. Erlanger practically carried out the second Stannius ligature. He ligatured, or rather compressed, in a dog the fibres which are known to connect the auricles with the ventricles in the mammalian heart, forming what is now known as the auriculo-ventricular bundle.

The experimental work of Gaskell has demonstrated that the conduction of stimuli through the heart from the auricle to the ventricle depends upon muscular continuity and not upon any nervous structures, and that the auriculo-ventricular bundle is a bundle of specialised muscle fibres that carries on this conduction of stimuli from the auricle to the ventricle. In a paper by Professor Aschoff of Freiburg[2] will be found a very full and detailed account of the topography and histology of this bundle. Aschoff and his pupil, Tawara, have worked this out in various animals (dog, cat, sheep, calf, rabbit, rat, guinea-pig, pigeon) as well as in man.

I shall content myself with reminding you that the bundle is not a fiction of the imagination but, briefly, has the form of an inverted "Y," which commences in the auriculo-ventricular node situated in the wall of the inter-auricular septum near the opening of the coronary sinus into the right auricle, and passes down in the inter-auricular septum, through the fibrous auriculo-ventricular ring into the inter-ventricular septum where it divides at the lowest part of the pars membrancea septi into two branches, one passing into the wall of the right, and the other into the wall of the left ventricle. Finally, the fibres of each branch spread out under the entire endocardial lining of the ventricular cavities—their final ramifications being what have long been known as Purkinje's fibres. It may be mentioned that the muscular bundle above described is supplied by a special branch of the right coronary artery.

Now Erlanger[3] by compressing this bundle of fibres in the dog's heart carried out in the mammal what the second Stannius ligature did in the frog, and this is the result he obtained. With very slight compression the interval between the contraction of the auricle and the ventricle was increased. With further compression a ventricular beat was occasionally missed and this occurred at regular intervals—for example, after every tenth auricular beat. With still further compression a beat was missed after every ninth, eighth, seventh, sixth, and so on until every alternate auricular beat failed to find any response on the part of the ventricle. The condition now produced may be diagrammatically represented thus, and is known as a 2:1 rhythm. (See Fig. 1. The

[2] Brit. Med. Jour., Oct. 27th, 1906.
[3] Ibid., Oct. 27th, 1906, p. 1111.

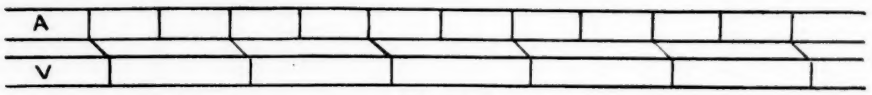


FIG. 1. RHYTHM 2:1

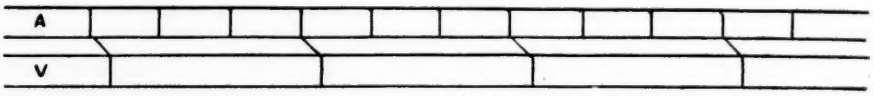


FIG. 2. RHYTHM 3:1

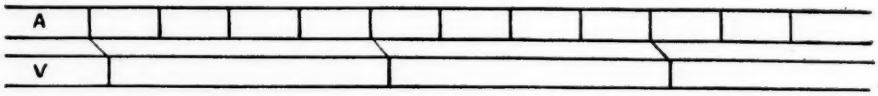


FIG. 3. RHYTHM 4:1

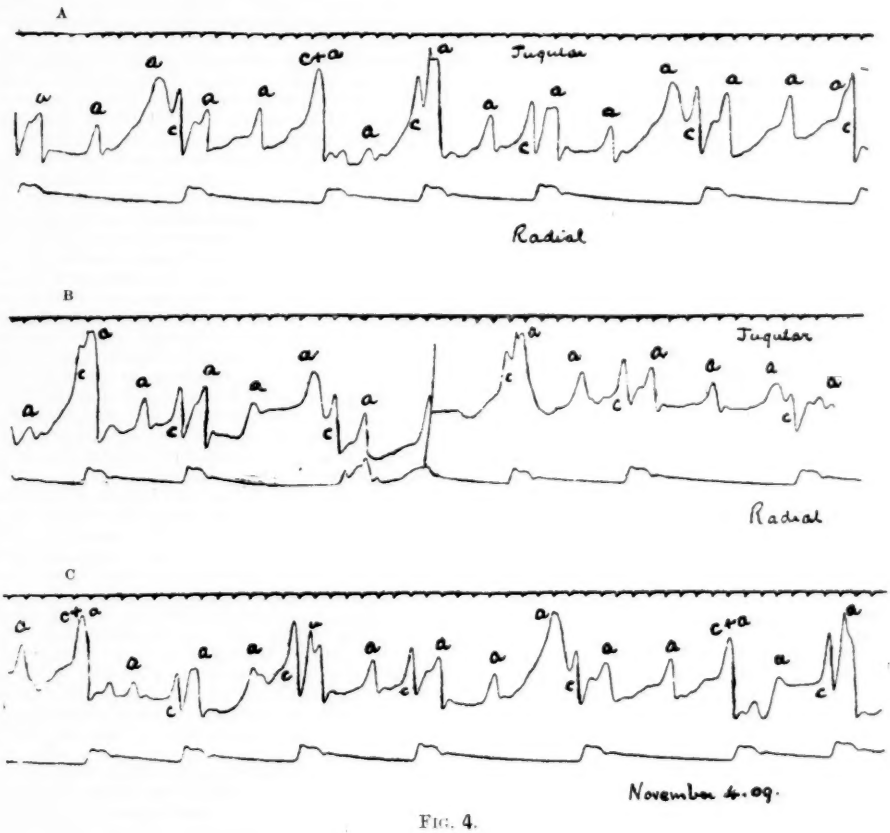


FIG. 4.

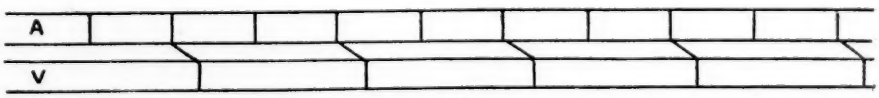


FIG. 5.

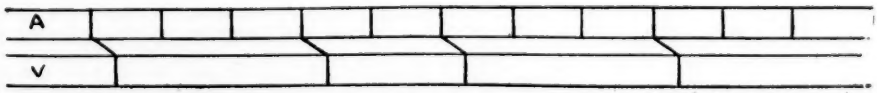


FIG. 6.

down strokes in the space marked "A" represent the auricular contractions; the down strokes in the space marked "V" represent the ventricular contractions.)

It was further found that a 3:1 or 4:1 rhythm (Figs. 2 and 3) might be obtained, and the dissociation might be so extreme that the auricles might contract 10 to 12 times while the ventricles stood still. Up to this point the block was "partial"; if the clamp were still further tightened the block became complete. The auricles continued beating as before, the ventricles stood still. The result was cerebral anæmia, evidenced by a syncopal or epileptiform attack, which passed off after a short time, when the ventricles commenced beating slowly with a rhythm altogether independent of that of the auricles. In a dog which survived the destruction of the band for one month the heart-block remained complete, and Erlanger found that after having destroyed the band stimulation of the vagi did not affect the ventricles, though the auricles were slowed.

Every stage of heart-block produced in the above animal experiments finds its prototype in the human subject in cases which have come under notice from time to time. Gibson[1] has collected 15 of these cases, and in all found damage to the auriculo-ventricular bundle. In 4 the damage was caused by gummata, in 3 by degenerative disease of the artery to the bundle, in 3 by fibrotic processes, in 2 by fatty infiltration, in 1 by a sarcoma, and in 1 by a cartilaginous tumour. The clinical investigation of these cases has been greatly facilitated by the ingenious instrument invented by Dr. James Mackenzie and known as the polygraph. With this machine simultaneous tracings can be taken of the radial and jugular pulses, and tested by this method the patient of whom we are speaking gave a tracing, of which Fig. 4 (A, B, and C) is an example

In this tracing the lower part (marked radial) is taken from the radial artery at the wrist, the upper part (marked jugular) from the venous pulse in the neck. The latter shows auricular contractions (marked "*a*") and ventricular or carotid contractions (marked "*c*"). The time-marking indicates fifths of seconds. This tracing is best interpreted from its diagrammatic representation (Fig. 5) in which the downstrokes in space A represent auricular contractions, while those in space V represent ventricular contractions. From this it will be seen that every other auricular contraction fails to produce a corresponding ventricular contraction; in other words, we have here a 2:1 rhythm. A similar tracing taken on March 9th, 1909, from the patient showed approximately a 3:1 rhythm, and Fig. 6 is a diagrammatic representation of this tracing. Tracings from the patient were taken on four different occasions with the following results:—

Date.	Contractions per minute.	Rhythm.
March 9th, 1909.	Auricles 87 Ventricles 31	3:1 (approximately).
June 8th ,,	Auricles 72 Ventricles 36	2:1.
Sept. 19th ,,	Auricles 72 Ventricles 40	2:1 (approximately).
Nov. 4th ,,	Auricles 90 Ventricles 42	,,

Still clearer evidence of the exact rhythm of the heart's action in this patient was afforded by an X ray examination undertaken on Nov. 4th by Mr. F. Emrys-Jones. By the help of the fluorescent screen a very striking effect was obtained, for the contractions of every part of the heart could be distinctly made out, and it was clear that the auricles were beating twice as rapidly as the ventricles.

It is evident, therefore, that in this man we have a well-marked case of heart-block of the incomplete variety, similar to that produced by Erlanger in the dog by moderate compression of the auriculo-ventricular bundle. What is likely to have been the cause of this condition here?

I think that rheumatism has probably been the important etiological factor, and that the systolic murmur, which I have described, indicates some fibrotic change in the mitral or aortic valve, probably in the mitral. I say fibrotic change in the valve, because, while there is a very definite systolic murmur, there are practically no other signs of mitral regurgitation or mitral stenosis. The auriculo-ventricular bundle lies so close to the anterior cusp of the mitral valve and to the cusps guarding the aortic orifice that it is not difficult to understand how the bundle may become implicated when there is any disease of either of these valves, and in this case I think that the bundle has probably been affected by a fibrotic process resulting from the attack of rheumatic fever 36 years ago, which at the same time was the cause of the valvular disease.

As to the length of time that the condition of heart-block has existed, it is not very easy to be definite; but if we regard the "giddy turns" as the symptom of the disease, and I think we must, it has existed for 20 years or more. If the fact be accepted that a condition of partial heart-block may continue to exist for 20 years without material interference with normal health and activity, we may next consider whether the condition has any importance from the point of view of prognosis; in other words, whether a sufferer from slight valvular disease is in any way worse situated by reason of the disturbance of rhythm referred to, or whether the latter may be entirely neglected. The answer is, I think, to be found in the frequency and severity of the semi-convulsive attacks which this patient describes as his "giddy turns."

No satisfactory explanation has yet been found to account for these symptoms, which occur in most cases of heart-block, and which observers consider to be due to cerebral anæmia. The attacks vary in character from very transient attacks of giddiness and syncope to general convulsions, and their severity is said to be proportionate to the length of time that the ventricles are not working. They apparently correspond to the convulsions that occur when heart-block is produced experimentally as Erlanger has done. They may be due to digestive or other disturbances stimulating the vagus, and so further slowing the ventricular beats, and this may be the explanation in this case. Unfortunately, I have not had an opportunity of taking a tracing during one of these attacks. However caused, these convulsive attacks must be considered to be in themselves a grave danger to the patient's life and may be compared to the attacks of angina occurring in cases of valvular and other disease of the heart otherwise presenting no alarming symptoms. It must, however, be noted that the condition has continued in this patient for probably over 20 years, and it is apparent, therefore, that the effect of this condition is not as grave as might be expected.

Supposing stimulation of the vagus to be the true explanation of the syncopal and convulsive seizures, it is evident that the condition of the patient would be positively improved if the disease should go on till the auriculo-ventricular bundle of fibres was completely destroyed and the condition of complete heart-block produced, in which the ventricles would beat with their own slow and independent rhythm. For Erlanger found after complete destruction of the bundle that stimulation of the vagi did not affect the ventricles. This is confirmed by the experiment of Gibson, who administered atropine to a patient with complete heart-block, and found that while the contractions of the auricles were increased from 90 to 275 per minute, those of the ventricles remained at 36.

As regards treatment, it is evident that the condition of heart-block once established is not likely to be benefited by any drugs, although in the syncopal and convulsive attacks rapidly diffusible stimulants and the nitrites may prove useful. In view of the fact, however, that more than 25 per cent. of Gibson's cases were found on post-mortem examination to be due to gummata, it would appear worth while to try the effect of potassium iodide.

It is extremely important to remember that in all these cases such drugs as digitalis and strophanthus are strongly contra-indicated. For this group of drugs diminishes the conductivity along the auriculo-ventricular band, and if pushed to excess will of itself produce the condition of heart-block. It is evident then, for this if for no other reason, the recognition of these cases is of importance, and in every case in which there is persistent bradycardia simultaneous tracings of the jugular and radial pulses should be taken, this being the readiest means by which this condition can be diagnosed with certainty.

Birmingham.

[1] Quarterly Journal of Medicine, vol. i., No. 2, p. 182.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Ruptured Tubal Pregnancy.—Contact Carcinoma.—Myomectomy.

A MEETING of this section was held on March 10th, Dr. H. MACNAUGHTON-JONES, the President, being in the chair.

Mr. T. CARWARDINE gave a demonstration with the epidiascope of a series of micro-photographs from a case of Ruptured Tubal Pregnancy, specially prepared to show certain features of the syncytium, which are probably of considerable importance in the physiology and pathology of the embryonic vesicle. The specimen was taken from a patient, aged 29 years, who was operated upon about 12 hours after the rupture. One specimen of a chorionic villus revealed the origin of multinucleated wandering cells from the fœtal epithelium having cell processes also, which, where not coagulated together by the hardening reagent, were of a delicate silken character, embracing a red blood corpuscle at one place. Some of the wandering cells were attached, others free. A section near the point of rupture showed indications of the "cell sheet," also numerous cells derived from the trophoblast invading the blood clot and undergoing amitotic cell division. They resembled the invading cells seen in the tissues outside a chorion-epithelioma. Villi in contiguity showed great diversity in the characters of the epithelial coverings; one might have a cap of squamous elements; another, columnar cells with brush-like, free edges; a third, varieties of epithelial type, from the cubical or columnar cell to irregular multinucleated protoplasmic masses all having cell processes. A typical illustration was given of such a section, which indicated the origin of Langhans' layer from the syncytial cells; and attention was drawn more particularly to the origin from the syncytium of masses of nuclei having numerous processes, the nuclei undergoing division. Such a mass is found free in the intervillous space, and in all probability has important significance both in the physiological condition and in chorion-epithelioma, and in support of this suggestion a drawing in Teacher's monograph was referred to, a portion of which gave similar indications, though not so clearly as in the photograph exhibited.

Dr. H. RUSSELL ANDREWS read a paper on Carcinoma of the Cervix of a Prolapsed Uterus in a Patient, aged 86, with a Contact Carcinoma of the Vulva. The patient was a single woman. The cervix, which projected two inches outside the vulva, was the seat of a large carcinomatous ulcer. On the right labium, where it was touched by the carcinoma of the cervix, was a contact carcinoma. Vaginal hysterectomy and excision of the carcinoma were performed. The patient made a good recovery in spite of her advanced age.—The paper was discussed by Dr. F. J. MCCANN and Dr. G. F. BLACKER.

Dr. RUSSELL ANDREWS also read a paper on Myomectomy during Pregnancy. The patient was aged 23, a I-para. A large sessile subperitoneal fibroid attached to the anterior surface of the uterus, which was nine weeks pregnant, caused fixation of the uterus in the pelvis in a position of retroversion. It was thought that retention of urine and abortion were likely to occur if the fibroid were allowed to remain, and that immediate myomectomy would give the patient the best chance of retaining her uterus. The fibroid, weighing 4½ pounds, was removed and the bleeding area, 5½ inches in diameter, was sutured with catgut. The uterus assumed its normal position at once, the pregnancy was not interrupted, and a living child was born at term, the labour and puerperium being normal.—Dr. G. E. HERMAN thought that there could be no doubt Dr. Andrews had treated this case in the best possible way. He had given his reasons for deciding on the course he had adopted most clearly and convincingly.—Dr. H. R. SPENCER said that there was no doubt the proper treatment had been adopted in this case, which had features exempting it from the general rule against performing myomectomy for corporeal fibroids during pregnancy. It was not to be expected that so large a tumour would permit the uterus to rise out of the pelvis. He had seen a case where a tumour nearly as large as a fist, which grew from the anterior wall, had caused retroversion of the gravid uterus, and by its movement when palpated through the distended bladder, closely simulated ballottement of the fœtal head. In that case the tumour, being much smaller than the specimen shown by Dr. Andrews, did not prevent the uterus from rising out of the pelvis, nor did it interfere with the pregnancy or labour.—Dr. MCCANN said that he had recently successfully enucleated a fibroid from the uterus of a woman, five and a half months pregnant. The operation was done on account of severe pain in the tumour, which on removal presented the typical appearances of red degeneration. Myomectomy was the ideal operation when it could be performed, and he desired to draw special attention to three points in the technique—firstly, the importance of making the incision as near as possible to the middle avascular line of the uterus; secondly, cutting within and not into the capsule of the tumour; thirdly, plugging the cavity at once with gauze until it could be finally closed with sutures. By attention to these points much loss of blood could be prevented during the operation.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on March 11th, Mr. A. PEARCE GOULD, the President, being in the chair.

The PRESIDENT showed a case of Detachment of the Entire Scalp in a female patient, aged 16 years, who when at work in a factory on March 31st, 1908, was caught by the hair in a machine and her whole scalp was torn off. Repeated attempts at skin-grafting had been made, but with little or no success. There was a slight growth of epidermis over the lower part of the forehead and on each temporal region, but for the rest the entire calvarium was covered with irregular, pale, poorly developed, and freely suppurating granulation tissue. Attention was called to the intolerance of antiseptics and the good effects of the continuous application of sterilised water, and to the success obtained by Thiersch grafts.

Mr. ARTHUR E. BARKER showed a female, aged 34 years, who stated that a small nodule was removed from the middle of her palate 13 years ago. About six years ago a lump appeared on the left upper gums and became nodulated. It had since spread across the hard and soft palate and over the left tonsil. A gland appeared under the left angle of the jaw about the same time and was still enlarged. In spreading, the growth could hardly be said to have ulcerated, but its inner border was raised and indurated and its middle seemed to have lost substance. It looked like an epithelioma, but its long duration and the patient's age seemed to negative this view. The case was put forward for diagnosis.—Mr. J. HOWELL EVANS and Dr. H. D. ROLLESTON discussed the case from the point of view of the affection being endothelioma.

Cases were also shown by Mr. S. MAYNARD SMITH, Mr. HUGH M. RIGBY, Sir JOHN BROADBENT, Mr. C. GORDON WATSON, Dr. JAMES GALLOWAY, Dr. F. PARKES WEBER, Dr. R. H. NORMAN, Mr. HOWELL EVANS, Dr. H. G. TURNEY, Dr. THEODORE THOMSON, and Dr. E. I. SPRIGGS.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Arthritis Deformans.

A meeting of this section was held on March 9th, Dr. LEONARD WILLIAMS, the President, being in the chair.

A discussion on Arthritis Deformans was opened by Dr. R. LLEWELYN JONES, who dealt with the classification and differential diagnosis of the various joint diseases grouped generically under that term. He considered that three distinct conditions of arthritis deformans might be recognised—namely, rheumatoid arthritis, osteo-arthritis, and infective arthritis. 1. *Rheumatoid arthritis.*—Etiologically, the salient characteristic of rheumatoid arthritis consisted in the frequency with which it arose in sequence or association with diseases of an infective or toxic nature, hence the strong presumption that this disease was of a similar origin. From an anatomical point of view the primary changes took place in synovial membrane and periarticular tissues, the cartilage being only involved secondarily. Ultimately secondary atrophic changes ensued involving skin, bone, and cartilage, with fibrous and bony

ankylosis. Clinically, the condition might be defined as a progressive symmetrical polyarthritis running an acute or chronic course, diversified by remissions and exacerbations. As an arthritic disease it was remarkable for the variety of its collateral phenomena, vaso-motor symptoms, pigmentation, localised sweatings, severe muscular atrophy, and in some cases glandular and splenic enlargements. Constitutional symptoms were well marked. 2. *Osteo-arthritis.*—Etiolologically considered, infective or toxic disorders did not seem to be so intimately related to the genesis of osteo-arthritis, whereas the influence of trauma, so inconspicuous a feature in rheumatoid arthritis, was much in evidence. Anatomically, the essential and primary lesions were in the bone and cartilage which underwent enlargement and hypertrophy, the changes in the synovial membrane taking place secondarily. Bony ankylosis never occurred. Clinically, constitutional symptoms were slight or trivial. The disease displayed a tendency to attack only a few joints, with a preference for the larger articulations, as opposed to the marked predilection by rheumatoid arthritis for the smaller joints. The character of the joint swellings differed markedly from the smooth spindle-shaped swellings of rheumatoid arthritis, the outline of the joint being broken and irregular owing to the presence of bony outgrowths studding the lines of junction of the articular ends. There was an absence of collateral phenomena, and this to his mind constituted a salient distinction, osteo-arthritis being much more a disease of joints, and joints only, than rheumatoid arthritis, where articular lesions formed only one feature in a very varied clinical picture. 3. *Infective arthritis.*—This he considered chiefly in relationship to the more acute forms of rheumatoid arthritis with which confusion chiefly occurred. After excluding the conditions most commonly reputed to be frequently confounded with acute rheumatoid arthritis—such as acute articular rheumatism, acute polyarticular gout, acute gonorrhœal rheumatism, and secondary syphilitic arthritis—Dr. Jones passed on to consider the clinical features differentiating acute rheumatoid arthritis from the large group of infective arthritides not hitherto connected with any special germ. He emphasised the importance of carefully eliciting the previous history for recent occurrence of toxic disorders known to be followed by arthritis, such as dysentery, typhoid fever, and so forth, thus avoiding their confusion with acute rheumatoid arthritis. Again, in the presence of local foci, such as pyorrhœa alveolaris, otorrhœa, &c., he deprecated the too ready assumption that arthritis occurring in such an association was necessarily acute rheumatoid arthritis, as undoubtedly many of these cases were instances of infective arthritis. He laid stress upon the following points of differentiation. In infective arthritis constitutional symptoms were more severe, splenic and glandular enlargements almost invariable with leucocytosis and secondary anæmia. Only a few joints were attacked, and these at the onset of the malady, by preference the larger articulations as opposed to the polyarticular distribution in rheumatoid arthritis, with preference for the smaller. Distribution was erratic, not symmetrical, and there was an absence of collateral phenomena distinctive of rheumatoid arthritis.

Dr. R. FORTESCUE FOX doubted whether there was sufficient evidence for classifying arthritis as atrophic or hypertrophic, or according to its commencement in the cartilages or synovial membranes. The condition was essentially degenerative, and the form and situation depended much on the period of life and the mixture of other causal elements. The infective element was predominant in the earlier decades. In middle life degenerative arthritis was often mixed with gout, and senile arthritis was largely traumatic in origin. A true arthritis might be the result of gout.

Dr. PRESTON KING could not follow Dr. Jones's classification of the disease, especially in his distinction between the rheumatoid and infective forms. His own experience led him to believe that rheumatoid arthritis was not so much a disease by itself as the result of infection from various centres.

Dr. C. W. BUCKLEY considered that while the types described were easily recognisable in well-marked cases they merged one into another, and that hypertrophic arthritis sometimes was a late stage of the atrophic form. He had seen this occur, and believed that it represented an attempt at repair and was thus in some degree a measure of the resistance of the system to the disease. Admitting an infective origin, it was necessary not to lose sight of other factors or predisposing causes which modified the form of the disease.

Dr. W. HALE WHITE thought that previous speakers had not laid sufficient stress upon the importance of those cases in which the arthritis, which followed upon an obvious source of infection, was slight, nor upon the frequency with which obscure cases were due to gonorrhœa. He considered that there was a distinct disease the bacteriology of which was unknown, which should be called rheumatoid arthritis. Sometimes similar symptoms were caused by a known infection; then the name of the offending micro-organism should be prefixed to the phrase "rheumatoid arthritis."

Dr. T. F. GARDNER wished to emphasise the fact that many cases of rheumatoid arthritis presented an early history of arrested tuberculosis most often showing itself as tubercular lymphadenitis. He agreed that the character of the "soil" as shown in ordinary tubercle was significant. He also pointed out that in long-standing cases symptoms of spinal cord degeneration with features of bulbar paralysis ensued, representing an ascending degeneration in the cord itself.

Mr. C. GORDON WATSON said he believed that Dr. Jones divided arthritis deformans into two main classes—the synovial (rheumatoid arthritis) and the bony (osteo-arthritis). Broadly speaking, he would like to argue that these two main classes were quite distinct in their pathology, the former infective and the latter traumatic. Of the latter class he had many examples following definitely on injury to a healthy single joint in young people.

Dr. F. H. HUMPHRIS described his experience with treatment by high candle-power electric light placed in a suitable reflector, followed by an administration of static electricity.

Mr. W. J. MIDELTON said that further experience had confirmed his belief in the efficacy of continuous counter-irritation in the treatment of arthritis deformans. He mentioned the case of a patient suffering from this malady complicated by exophthalmic goitre. She had resisted treatment previously, but gained 28 pounds in weight, and her arthritis was greatly benefited during a course of continuous counter-irritation without any attempt at over-feeding.

Dr. A. P. LUFF, Mr. E. SOLLY, and Dr. R. ACKERLEY also took part in the discussion, which was adjourned until April 20th.

OPHTHALMOLOGICAL SOCIETY.

Xerosis Conjunctivæ and Nyctalopia.—Panophthalmitis.—Exhibition of Cases.

A MEETING of this society was held on March 10th, Dr. G. A. BERRY, the President, being in the chair.

Mr. MALCOLM L. HEPBURN read a paper on Xerosis of the Conjunctiva and Night-blindness. He said that the hitherto accepted theory regarding the cause of this complaint—namely, torpor of the retina due to general malnutrition, could not be justified, either by the condition of the patients or by the presence of the ordinary signs of defective circulation in the retina. A more probable explanation of the night-blindness was that certain rays of light acted prejudicially on the visual purple, causing retardation of the normal metabolism, a theory borne out by the occurrence of this complaint during the months from May to September, when the intensity of the rays of light was presumably at its greatest. The relationship between the xerosis patches and the night-blindness presented many difficulties, and while the connexion between the two seemed to be a very close one, a common cause was not easy to find. It was suggested, however, that the same rays of light which influenced the visual purple acted in some way on the conjunctival mucous glands, inhibiting their secretory function; and in support of this it was found that during the continuance of the xerosis patches the night-blindness persisted, whereas when the former were removed the latter disappeared also. The treatment usually adopted varied considerably, since it was found that many remedies produced an amelioration of the symptoms, though the time they took to act differed according to the special method employed. Some relied on external remedies alone, while others strongly advocated drugs internally without any local application whatever. Bandaging the

eyes for a short time had alone been known to give relief, and whatever treatment might be used must evidently not only modify the action of the special rays of light on the conjunctiva, but also their path through the pupil to the retina, since in no other way could the simultaneous improvement in the two prominent symptoms be explained. Arising out of the discussion of this subject, it appeared that there was some reason for thinking that congenital night-blindness, xerosis of the conjunctiva and night-blindness, and the night-blindness of malnutrition might be due to a common cause.—Dr. A. LEVY said cases which he saw showed fundi which were paler than ordinary, and he thought the paleness of the fundi had something to do with the disease. But Mr. Hepburn had not borne that out. However, he thought albinos did not, as a rule, show night-blindness, and they saw better in the night than in the day. He agreed that malnutrition had nothing to do with it. He had not seen xerosis alone.—Mr. M. S. MAYOU said that some years ago he examined a number of such cases and found the changes in the epithelium were in the direction of keratinisation, due, perhaps, to the fact that the disease occurred during the prevalence of hot, dry winds.—Mr. C. DEVEREUX MARSHALL pointed out that the macula did contain visual purple; it was not recognised formerly because the visual purple bleached quickly in light. It had also been said that the bat's eye did not contain visual purple, but if it did not it contained a photo-chemical substance which acted like visual purple.—Mr. G. H. C. MOLD, Mr. S. JOHNSON TAYLOR, Mr. SYDNEY STEPHENSON, and Mr. N. B. HARMAN continued the discussion, and Mr. HEPBURN replied.

Mr. R R. JAMES read a paper on a contribution to the Bacteriology of Panophthalmitis. He related the case of a labouring man who was admitted into St. George's Hospital in November, 1909, with what appeared at first to be an orbital cellulitis following a wound of the upper lid received a couple of days before. There were marked proptosis and extreme chemosis, with haziness of the cornea, but no hypopyon Incisions were made in the lids, but no pus was found. The patient's general condition, which was extremely bad on admission, began to improve, but a couple of days later the conjunctival sac was found to be lined with a tough membrane. The eye was still proptosed, the cornea was uniformly yellow in colour, and gas bubbles and pus were observed issuing from a tiny spot at the upper part. The hole was enlarged and the contents of the globe scraped out, and the man made a slow but uneventful recovery. The bacteriological report by Dr. C. Slater showed that swabs from the pus yielded a streptococcus and a large Gram-positive, immobile, non-sporing bacillus, closely related to, if not identical with, the bacillus aerogenes capsulatus. The results of cultivation on milk, potato, gelatin, and broth were given, and also the results of inoculation of a guinea-pig. The animal rapidly died and the post-mortem findings were similar to those described in a previous paper by Mr. James.—The paper was discussed by Mr. MAYOU and Mr. JAMES replied.

Mr. J. B. LAWFORD showed a case of Massive Exudation in the Retinæ. There was no ascertainable family history of importance. The patient was aged 20 years, and was incapacitated by the failure of sight.

Mr. E. A. DORRELL showed a case of Oxycephaly, and it was commented upon by Mr. HERBERT FISHER, who discussed the possible causation of the condition.

Mr. J. H. FISHER showed a case of Congenital Cataract, the patient having cataracts of quite different character—one large lamellar and the other discoid—in the two eyes.

Mr. A. W. ORMOND showed two cases: (1) A case of Persistent Mydriasis in both eyes; and (2) a case of Transient Myosis associated with headache. The last of the two cases caused considerable discussion.—Dr. E. FARQUHAR BUZZARD said the cause, whatever it was, was acting on both sides, and suggested that there was some paroxysmal condition connected with the third ventricle. Or there might be a cyst in connexion with the choroidal plexus which would at times block the iter, producing for the time being hydrocephalus, probably bilateral in character.—The case was also discussed by the PRESIDENT and Mr. RAYNER D. BATTEN.

Mr. HARMAN brought forward later reports on a case shown last time as possibly granuloma, now shown to be a papilloma.

Mr. DEVEREUX MARSHALL described for Mr. T. H. BUTLER a new Folding Operating Table.

Mr. R. FOSTER MOORE showed a case of Subretinal Hæmorrhage.

Mr. BATTEN showed a case of Persistent Mydriasis following operation for high myopia.

Mr. J. F. CUNNINGHAM showed a case of Vertical Elongation of the Cornea in congenital syphilis.

LIVERPOOL MEDICAL INSTITUTION.

Ureteral Calculi and X Ray Diagnosis.—The Value of Serum- and Vaccine-therapy.

A MEETING of this society was held on March 10th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. THURSTAN HOLLAND read a short paper on Ureteral Calculi and X Ray Diagnosis, which was discussed by Dr. W. C. ORAM, Dr. T. R. GLYNN, and Mr. DAMER HARRISSON.

Dr. NATHAN RAW read a paper on the Value of Sera and Vaccines in the Treatment of Disease. The paper was based on an observation of the effects of such treatment in 628 cases occurring in hospital and private practice. The sera employed included anti-streptococcic serum, anti-diphtheritic serum, anti-tetanic serum, and Maragliano's serum for tuberculosis. Anti-diphtheritic serum was employed in 69 cases, and in definite cases of diphtheria the results had been excellent. Dr. Raw had treated eight cases of tetanus (acute and subacute) with antitetanic serum, on the whole with good effect. The effect of Maragliano's serum on 14 cases of pulmonary tuberculosis had been difficult to estimate. 28 cases had been treated by a single strain of anti-streptococcic serum and 182 cases by means of the polyvalent serum. The cases included such infections as puerperal septicæmia, acute erysipelas, malignant endocarditis, streptococcic cellulitis, acute tonsillitis, and septicæmia. Dr. Raw found that the treatment of acute erysipelas by the serum was always attended with success, and one successful result in the treatment of malignant endocarditis was recorded. Amongst the vaccines employed tuberculin, pneumococcic, typhoid, and staphylococcic were considered. The action of Coley's fluid in nine cases of inoperable cancer and sarcoma was recorded; in only two cases had there been any successful result. The effect of the typhoid and pneumococcic vaccines was uncertain. The treatment of carbuncles, boils, and pustules by staphylococcic vaccines had proved satisfactory. Dr. Raw considered that in a great many cases of tuberculosis the treatment by means of tuberculin had been of very decided value. He employed tuberculin prepared from both human and bovine sources. He believed that local forms of tuberculosis, such as occurred in glands and joints, were chiefly due to the bovine type of bacillus, and that pulmonary tuberculosis was due to bacilli of the human type. He considered that in the local forms of tuberculosis the administration of tuberculin prepared from human sources had the most beneficial effect, and *vice versâ*.—A lively discussion, opened by the PRESIDENT, followed.—Dr. ERNEST GLYNN was surprised that Dr. Raw should consider that local forms of tuberculosis, as in glands and joints, were mostly due to bacilli of the bovine type, because (1) recent observations by Smith, Oehlecker, Duval, Park, Lewis, and the German Imperial Health Office had shown that 34 out of 56 cases of cervical gland tubercle were caused by bacilli of the human type; (2) the Royal Commission had found that 16 out of 30 cases of gland tubercle and 9 out of 9 cases of joint tubercle were also of the human type, though Dr. Raw claimed "that their findings entirely corroborated" his views. Dr. Glynn was also surprised that Dr. Raw should treat gland and joint tuberculosis, assumed by him to be of bovine origin, with tuberculin made from bacilli of the human type, because recent work indicated that a vaccine should be prepared from the same type of organism as that causing the infection, and should even be autogenous if possible.—Dr. J. HILL ABRAM said that his experiences with these remedies, excluding diphtheria, had on the whole been unsatisfactory. Dr. Raw's successful treatment of pulmonary tuberculosis with a remedy derived from a bovine source confirmed the old position which Dr. Abram had never given up—viz., that there is no vital difference between bovine and human tuberculous disease. In fact the matter stood pretty much where it did before Professor Koch's startling statement at the London meeting.—Dr. W.

PERMEWAN thought that there was a real risk of ordinary surgical principles being lost sight of in the eager rush to vaccines in certain cases. He instanced cases of chronic suppurative ear disease where much time had been wasted and danger incurred by the useless injection of vaccine.—Dr. W. B. WARRINGTON said that impressions formed from a large number of cases were valuable, but that it was desirable to obtain when possible detailed analyses, since, as far as he knew, no single case of septicæmia had yet been proved to have been cured by these means; for local infection the vaccines of coli, gonococcus, and staphylococcus were of approved benefit.—Dr. R. W. MACKENNA said he had been disappointed in tuberculin; he had found no improvement in cases of lupus from the use of Koch's T.R., and his colleagues at the skin hospital had had the same experience. He had had a large experience of staphylococcic vaccine from various sources, and in many cases the most gratifying results had followed treatment. A pustular acne in a patient past the acne age would rapidly yield to vaccine therapy, but vaccines were not "cure-alls."—Dr. ORAM stated that he had never seen any improvement from the administration of tuberculin in the treatment of cases of lupus. He was of opinion that vaccines were unsuitable in acute cases, and that their use should be limited to those cases in which there was reason to believe that the toxin from the focus of infection was not obtaining access to the system. He related a case of furunculosis where ill-effects had followed the injection of vaccine during the negative stage, and repeated temporary improvement followed each injection of serum.—Dr. HENRY H. CLARKE, Dr. G. A. CRACE-CALVERT, and Dr. O. T. WILLIAMS also discussed the paper.

EDINBURGH OBSTETRICAL SOCIETY.

Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa.—Uterus Bicornis.—Antenatal Lobar Pneumonia.

A MEETING of this society was held on March 9th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. J. M. MUNRO KERR (Glasgow) read a paper on the Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa. He first of all referred to the necessity of conservative surgery when that was at all possible in diseased conditions of the uterus and appendages. He then discussed the desirability of radical operative procedures in cases in which the adnexa were hopelessly diseased. He believed in such cases it was undesirable to leave the uterus behind. The two diseases of the adnexa to which he specially referred were malignant disease of the ovaries and pyosalpinx. As regards malignant disease of the ovaries, Dr. Kerr pointed out how unsurgical it was to leave the uterus behind. It was generally now accepted that in malignant disease the operation should be as radical as possible. He referred to several cases in support of this contention. As regards double pyosalpinx he considered it advisable that the uterus should be removed along with the pus tubes, and that for the following reasons: (1) the diseased tubes could be more satisfactorily removed if the uterus were also taken away; (2) by removing the uterus along with the appendages there was less likelihood of the tubes being burst during the operation; and (3) in not a few cases where the tubes only were removed the uterus caused trouble, and a subsequent operation for its removal became necessary. Dr. Kerr finally referred to the importance of dealing thoroughly with any bowel that might be injured. He believed it was better to resect the portion of bowel badly injured rather than try to patch it up. He mentioned in this connexion a case recently operated upon where both tubes and ovaries were removed along with a very much injured cæcum. The patient was now perfectly well. As regards results, Dr. Kerr stated that when it was his custom to simply remove pus tubes he had a maternal mortality of 10 per cent., but during the last two or three years, since the more radical treatment was adopted, neither he nor his assistant, Dr D. Dickie, had had any maternal deaths.—Professor Sir J. HALLIDAY CROOM, Dr. A. H. FREELAND BARBOUR, Dr. N. T. BREWIS, Dr. W. FORDYCE, Dr. E. W. SCOTT CARMICHAEL, and the PRESIDENT made remarks on the paper, and Dr. KERR replied.

Dr. B. P. WATSON read notes on two cases of Uterus Bicornis. The first case was a woman, aged 26 years, who had a full-term child eight months previously. She was nursing the child. There had been no menses since the birth of the child, only a slight discharge of blood at the third month of lactation. About four months afterwards she had a severe vaginal hæmorrhage and something came away. The medical man was called in a few days afterwards and found fœtid decidual remains. On clearing the uterus out, the finger in the cervical canal slipped into another smaller cavity to the left of the one containing the remains of the decidua. This proved to be the left half of a double uterus. The forefinger could be passed into one and the middle finger into the other horn and each moved separately. On bimanual examination the fingers of the external hand could be passed between the two and depressed as far as the junction of the horns at the os internum. No decidua was felt in the left half. There was a common cervical canal, but a mesial band divided the external os into two halves. There was also a loose band at the roof of the vagina, the remains of a septum attached at its ends close to the middle of the anterior and posterior vaginal walls. The second case was discovered accidentally while removing a retained placenta which was in the right half of the uterus. The left half admitted the finger at the termination of labour. The two halves were separate down to the os internum, but there were a common cervical canal and external os. She had had four full-time labours previously without any trouble. This condition seemed to interfere very little with the fertility of the patient, and it seldom gave rise to any trouble at labour except in those cases where the pregnancy was in an occluded horn. In all cases the non-pregnant half enlarged during pregnancy and contracted with the pregnant horn during labour. In some cases a decidual cast had been expelled.—Professor Sir J. HALLIDAY CROOM referred to the great difficulty there was in diagnosing such a condition. He related two cases where he had operated and found it present; he had expected to find an extra-uterine pregnancy in one case, and an ovarian tumour complicating pregnancy in the other. On the double-horned uteri being recognised the operation was stopped, and in both cases the pregnancy went on to full time.—Dr. BARBOUR, Dr. FORDYCE, and the PRESIDENT discussed the paper, and Dr. WATSON replied.

The SECRETARY read a paper by Dr. ALEXANDER DON (Dundee) on a case of Antenatal Lobar Pneumonia. The child on being born did not breathe well and had to be well rubbed and slapped to help the respiration. Four hours after birth the child was cyanosed, and on examination the lower half of the left side of the chest was found to be dull, and moist crackling râles were heard over the area. There had been cough with some brownish expectoration, and later some blood-stained mucus. The child died 19½ hours after birth. A swab of mucus taken from the mouth immediately after death was reported on by Professor L. R. Sutherland (Dundee): "Pneumococci are present in large numbers in cultures incubated over night; there are also a few colonies of staphylococci; no streptococci are found." The child's head on being born was still enclosed in the unruptured membranes, so that the brownish material coughed up could not have been obtained from the maternal passages.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on March 11th, Dr. H. Cooper Pattin, the President, being in the chair.—Mr. T. W. Naylor Barlow read a paper on Disinfectants, their Scientific Uses, their Quack Uses, and their Dangers, in which he reviewed the situation with regard to disinfectants and the practice of disinfection. He suggested that a large amount of the disinfection as at present carried out was nothing more than quackery in its worst form; that of the remainder much was useless owing either to the fact that the disinfectant used was of no value or that its mode of use rendered it valueless; that much public and private money was wasted on the purchase of disinfectants; and that the distorted view which the public had of the value of disinfectants constituted a real danger. After enumerating some of the special uses to which disinfectants were put, including the watering of streets, the sprinkling of ashpits, and the washing down of drains, Mr. Barlow said that, in his opinion, their only rational use was in connexion with the infectious fevers. Here there was some definite object in view—namely, to kill the germ causing the disease, and by

so doing to prevent the infection from spreading. He pointed out, however, that it had been shown from clinical observation that the organisms which were presumed to be the cause of the various infectious diseases differed widely so far as their infecting qualities were concerned. Each disease should be treated on its merits. The measures suitable for typhoid fever were vastly different from those applicable to diphtheria. Referring to the dangers attending the universal practice of throwing disinfectants about, Mr. Barlow declared that many housewives thought that when they had a case of infectious disease in their household it was not necessary to be ordinarily clean, certainly unnecessary to isolate the patient, provided a sufficient amount of disinfectant was used. He suggested that disinfectants were now frequently used at the expense of cleanliness and markedly so in regard to the daily disinfection of schools.—Dr. William Butler, although sceptical as to the use of disinfection after scarlet fever, considered that its uselessness had not yet been proven, and as the cost was not very great it was better to act on the possibility of good resulting. Among some of the advantages of disinfection was the thorough cleansing of the house concerned. —Dr. F. J. Allan strongly disapproved of the indiscriminate distribution of disinfectant fluids and powders, and considered that medical officers of health should take a firm stand with their councils in expressing this disapproval. He pointed out that in London the sanitary authority was required to cleanse the ashbins. He urged the necessity for insisting upon greater cleanliness in schools.—Dr. S. C. Lawrence thought that there was a danger of discouraging cleanly ways by the too free use of disinfectants. In the Edmonton district, where there was a population of 60,000 persons, £240 were spent yearly upon disinfectants for general distribution, a sum which he considered to be extravagantly high.—Dr. P. Caldwell Smith said that in Wandsworth all disinfection was carried out by the staff of the health department. He considered that after cases of infectious disease disinfection should be carried out by trained men.—Mr. F. E. Fremantle thought that until we could get an alternative we must stick to the principle of disinfection, and considered that until the educated classes could be induced to regard disinfection in its true light it was hopeless to expect the general public to do so. —Dr. Herbert Peck related the good results which had followed the disinfection and scraping of privy vaults and pails in the Chesterfield rural district after an outbreak of typhoid fever.—Mr. Edward Sergeant, while agreeing that much money was wasted upon the injudicious use of disinfectants, considered that the time had not yet arrived for a general condemnation of disinfectants.—Mr. Herbert Jones pointed out the actual harm which was done by using disinfectants in earth closets by the inhibition of the beneficent bacteria in the earth, and thus preventing its nitrifying action.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 4th, Dr. Neville J. Wood, the President, being in the chair.—Mr. Donald J. Armour read a paper on the Treatment of Brain Tumours, which was illustrated by reference to cases, lantern slides, and specimens. He said that there was a general impression among the profession that little good could be expected from operations on brain tumours, but he pointed out the rapid advances of cerebral surgery in the last few years, and regretted also the want of early diagnosis met with and consequent late recourse to the surgeon, so that he generally had not to deal with an early stage and small size. He disagreed with the classification of Walton and Paul, from their statistics as to "operable," "inoperable," and "doubtful," pointing out that by operable they evidently meant curable, and that their statistics were based upon cases in which death was caused by the size of the tumour, and that statistics, to be of any value, must be derived from the records of cases operated on fairly early. He drew attention to what he considered a lack of clear distinction between the radical and palliative operation. He would describe as operable any case of brain tumour in which the growth could be wholly or partially removed with subsequent benefit to the patient. He pointed out the importance of decompression at an early stage before vision began to fail. As to syphilitic tumours, surgical interference was imperative in those cases where symptoms were increasing in spite of adequate medicinal treatment and where localisation was exact, and he would say that when diagnosis and localisation had been arrived at, unless there was decided improvement under medicine in six weeks' time, operation should be recommended, and immediate operation without trying anti-syphilitic remedies when the symptoms were urgent and the risk to life too great to try medicinal measures. Before operating it was impossible to say whether the case would be suitable for a radical or a palliative operation—whenever possible the growth must be removed. Palliative operations were practically free from risk to life and were of the greatest value in relieving the distressing symptoms of headache, vomiting, and optic neuritis, with its resulting blindness. The classes of cases for palliative operations were given: (1) those in which the tumour could not be removed, though localised; and (2) those in which the tumour could not be localised but in which operation was demanded for the relief of symptoms. He discussed other palliative operations, such as lumbar puncture, punctures of lateral ventricle, none of which could compare with trephining. In a decompression operation the opening should be over as unimportant an area of cortex as possible and means taken to restrain hernia cerebri. The questions referring to the exploration for subcortical growths were discussed and also the advisability under certain circumstances of doing the operations in two stages, as was done at the National Hospital, Queen-square. He referred to the dangers arising from interference with the respiratory and cardiac centres. To sum up, he would divide cases of brain tumour into three classes from the point of view of operation: (1) those in which the tumour was completely removed and the patient cured; (2) those in which it could be removed in part with marked temporary benefit to the patient; and (3) those in which the tumour could not be removed at all, but the patient was relieved of the painful symptoms of the disease by the operation.—The paper was discussed by the President and Dr. T. Grainger Stewart.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 9th, Dr. W. E. Fothergill, the President, being in the chair.—Dr. C. Powell White gave a lantern demonstration illustrating experiments on Cell Proliferation. The experiments consisted in the injection of fatty acids subcutaneously into the external ears of rabbits and the mammary glands of guinea-pigs. The acids used were oleic and palmitic acids. The injection set up aseptic suppuration with the formation of an abscess. When such an abscess came in contact with any epithelium, such as a hair follicle or sebaceous gland, the epithelium proliferated and grew over the surface of the abscess forming a complete lining of squamous epithelium. In two cases in which oleic acid saturated with carbonic acid was used the epithelium showed more active proliferation, and penetrated into the subjacent connective tissue, forming columns and isolated groups of epithelial cells. In two cases in which the oleic acid was saturated with methyl oxalate emboli of squamous epithelial cells were found in the lymphatics, and in these two cases also there were found multiple cartilaginous nodules growing from the auricular cartilage. The abscesses formed by injecting oleic acid into the mammary glands became lined with squamous epithelium derived by metaplasia from the mammary epithelium.—Dr. W. Milligan made some remarks on the Pathology and Treatment of Otitic Meningitis, pointing out the usual channels of infection, the various types of meningitis, and the organisms responsible for its incidence. In addition, he referred to the value of lumbar puncture as a diagnostic and as a therapeutic measure, and to the necessity of early operation combined with frequent lumbar puncture to relieve intracranial tension.—Dr. A. Hill Griffith showed some Tumours of the Eyelid, including a lipoma, a condition which is stated in the text-books not to occur.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on March 11th, when Mr. H. S. Souttar gave a demonstration of the Gastroscope invented by himself. Mr. Souttar said that the mucous membrane was the all-important element in stomach diseases, and that before the introduction of the gastroscope no method existed for distinguishing the different macroscopic lesions. He then described the appearance of the gastric mucous membrane in various sites; the fundus could easily be distinguished from the pyloric end, and the pylorus with its radiating folds formed a most conspicuous object. The walls

of the stomach were in constant rhythmical notion. The passage of the instrument ordinarily required general anæsthesia; difficulties were usually felt opposite the cricoid cartilage and at the cardiac orifice, but with gentle pressure the resistance could be overcome. By the courtesy of the staff of the Radcliffe Infirmary two patients suffering from doubtful gastric disease were then examined by this method, in one of whom the diagnosis of gastric ulcer was established.

Reviews and Notices of Books.

Sprains and Allied Injuries of Joints. By R. H. ANGLIN WHITELOCKE, M.D., M.C. Edin., F.R.C.S. Eng., Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford; Lichfield Lecturer in Surgery in the University. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 241. Price 7*s.* 6*d.* net.

IN no part of surgery has more assistance been given to the surgeon by the introduction of the Roentgen rays than in the diagnosis of injuries of the joints. No rays are needed for the recognition of an ordinary dislocation, but it is on those numerous and slight cases of injuries to joints which are ordinarily called sprains that a great flood of light has been thrown by the introduction of the X rays. Many cases that formerly we should have called, quite justifiably, sprains we now know are instances of injury to bone, and therefore we are able to understand better than was then possible the tardy convalescence which so often ensues on the best treatment at our command. The rays do not absolve the surgeon from the employment of the ordinary diagnostic means such as palpation, but if the slightest obscurity persists after these have been employed he is not justified in refraining from availing himself of the advantage offered by a skiagram. It is clear, therefore, that there is ample justification for the writing of a special treatise devoted to these, as they may still be called, minor injuries of joints, and the work has been well done here.

The book commences with a short account of the structure and function of joints, passing to the general consideration of sprains. The theories of sprains are then considered, and the lesions of individual joints are discussed. In the fifth and sixth chapters injuries to the knee-joint are dealt with, especially those many lesions which are conveniently classed together as internal derangements of the knee-joint. The two following chapters are concerned with injuries of muscles and tendons, and the last deals with the use of massage, movement, and exercises in the treatment of sprains and bruises. In an appendix is an account of liniments and bandages useful for affected joints. There are numerous illustrations, and, like all books issued by these publishers, it is well printed. The tendency of the present day, in spite of the spread of education, to resort to bone-setters and other unqualified practitioners is in some degree due to the lack of energy not rarely seen in the orthodox treatment of the minor injuries of joints. All medical practitioners should see to it that they do not leave unfinished any of the treatment, lest they give an excuse for the introduction of unqualified treatment, with its attendant ill results. In utilising X rays for the diagnosis of obscure injuries of joints it must be borne in mind that it is often necessary that the joint should be viewed from more than one aspect, for a fracture or the misplacement of a bone may be quite invisible when looked at from one direction but perfectly clear when seen from another, and, therefore, the use of a screen is of great value, even though it may be advisable or necessary to have a skiagram taken to serve as a permanent register of the lesion found. The wrist is peculiarly liable to ill-defined injuries, and it is now known that fracture of one or more bones of the carpus is by no means rare, and apparently the commonest of these to be injured is the scaphoid.

We think that this book will assist those who have to deal with some obscure injury of a joint, and its perusal will certainly help to equip the practitioner to treat such cases when they come his way.

Studies in Tuberculosis. By HENRY CLARKE, M.A., M.D. Cantab., Physician to the Liverpool Hospital for Consumption and Diseases of the Chest; Superintendent of the Research Laboratory of the Hospital. Liverpool: At the University Press; London: Archibald Constable and Co. Pp. 53. Price 5*s.*

THE author explains in his preface that these studies consist mainly of a thesis submitted for the degree of Doctor of Medicine of the University of Cambridge. The work is divided into three sections: Diagnosis, Prevention, and Treatment. In discussing the signs and symptoms of pulmonary tuberculosis Dr. Clarke draws attention to the study of the patient's temperature. The effect of exercise in promoting auto-inoculation often gives substantial aid in arriving at a diagnosis. He relies on the mouth temperature for clinical purposes, and ample evidence is now to hand that for all practical work this method of estimating the temperature is satisfactory. The rectal temperature is still resorted to at some sanatoriums, but it subjects the patient to a certain amount of inconvenience, and we agree with Dr. Clarke that the mouth temperature may be depended upon, provided that sufficient time is allowed to counteract the cooling of the mouth by cold air. The remarks on the diagnostic value of the opsonic index are interesting, but the important fluctuations caused by exercise are not mentioned. The normal limit allowed by Dr. Clarke (0·9 and 1·1) we consider too narrow, and we would substitute 0·8 and 1·2.

A comparison is made between the method of administering tuberculin in this country and that adopted in Germany. Dr. Clarke, after trial of both, leans towards the latter, but we think on insufficient grounds. He has not apparently grasped the most modern plan used by physicians in this country—namely, that the dose, and especially the intervals between the doses, must be judged by a study of the patient's temperature chart and certain symptoms, such as headache and undue rapidity of pulse. The object of the German method is to push the dose until a rise of temperature is produced, and then to give the same dose when the temperature returns to normal. In this country the dose is increased until a "flattening" of the temperature curve is observed, and then another dose is not given until the temperature begins to "swing" again. We much doubt whether Dr. Clarke's suggestion would prove satisfactory—namely, that "doses sufficient for a month at a time can be sent by post or taken home by the patient." For the proper effect of tuberculin to be produced the patient must be under close observation, otherwise either the full benefit will not be produced or over-doses may be taken. The treatment of tuberculosis by tuberculin will require extended trial by many observers before the best method of administration can be actually determined.

The Essentials of Chemical Physiology. By W. D. HALLIBURTON, M.D. Lond., F.R.S. Seventh edition. London: Longmans, Green, and Co. 1909. Pp. 280. Price 4*s.* 6*d.* net.

A GOOD deal that in previous editions of this book has become antiquated has been excised, and the subject matter has been brought up to date, so that the bulk of the seventh edition has been little increased. The work consists of an elementary and advanced course and hardly a page seems to have escaped revision. A new lesson has been introduced into the elementary course—viz., on "Some Typical Organic

Compounds," in order to give the student some notion of such important compounds as alcohol, aldehyde, formic, acetic, and oxalic acids, phenol, fatty acids, ketones, ethers, esters and amino acids, and aromatic compounds, amongst others. Naturally considerable space is devoted to the proteins. The German word "Baustein" (building stone)—cleavage products of proteins—seems to have taken a definite place in the text, for we find on p. 113 its introduction without the use of inverted commas. The lipoids, precipitins, and opsonins come in for discussion.

The chapters on respiration have been carefully revised and added to, and in this connexion the author acknowledges his indebtedness for valuable help to Mr. J. Barcroft, whose work in this department of physiology is so well known. Similar thanks are due to Dr. O. Rosenheim and Dr. H. W. Lyle in other departments. Tissue respiration receives adequate treatment, and this is a point worth noting, for the average medical student is content with a very superficial knowledge of the respiratory exchanges in the lungs, forgetful of the fact that the real respiration—the internal respiration—takes place in the tissues themselves.

The advanced course consists of 14 lessons, and it also has been brought up to date. The instructions are mainly practical, theoretical matter being largely omitted. The appendix contains a description of such instruments, and their use, as hæmocytometers, hæmoglobinometers of various kinds, polarimeters and the principles of their construction, and air pumps. There is a short analysis of the all-important processes of diffusion, dialysis, osmosis and osmotic pressure, colloids and colloidal solutions, and in this connexion we have mentioned the Tyndall phenomenon, exhibited by colloidal solutions which scatter polarised light, the basis of what are termed ultra-microscopic observations. The "ultra-microscope" seems destined to play an important part in analysing the constitution of colloidal mixtures. It gives a brilliant analysis of sulphur in solution, for example.

We congratulate the author on the thorough and comprehensive survey of chemical physiology which he has managed to condense and elucidate in little more than 250 pages. We notice that "Metschnikoff" is spelt in one place with an "s," a not uncommon slip.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 36. Observations on Rabies: With special reference to an Atrophic Form of the Disease occurring in Animals. By Major G. LAMB, M.D. Glasg., I.M.S.; and Captain A. G. MCKENDRICK, M.B. Glasg., I.M.S. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Superintendent of Government Printing. 1909. Pp. 34. Price Annas 8, or 9*d*.

THERE are still many problems in connexion with rabies which await solution, the greatest of these being the nature and life-history of the organism which causes the disease. Until this organism has been thoroughly investigated many of the subsidiary questions must remain hidden and be matters only for speculation. Still, within the last few years especially, a considerable number of new facts have been added to our knowledge which tend to help to a better understanding of the etiology of the disease, of its evolution, and of the immunising process to which persons bitten by rabid animals are now subjected by the Pasteur method of treatment and its modifications. The organism of rabies has not yet been discovered and the term virus is used to denote this hypothetical germ, and "emulsion of virus" to denote a portion of the central nervous system containing the virus. The term "virus of the street" was given by Pasteur to the virus as found in rabid animals in nature. When tested by inoculation on rabbits in the laboratory this virus is found to vary in virulence according to the animal from which it is obtained. The term "fixed virus" is used to denote a virus which, by passage through a series of animals, has become of such a strength that the incubation period of the disease after subdural inoculation of the virus is practically always the same and cannot be shortened by further passages. As a rule, this term is applied to a virus which has become of definitely short incubation period by passage through rabbits, and there also occurs a fixed dog virus which has become fixed by passage through dogs. The authors describe several series of important experiments carried out by them. A virus originally obtained from a "dog in the street" was passed through a series of 13 dogs and an increase of virulence was found. Negri bodies were demonstrable in certain cells of the central nervous system of the dogs of the first few passages, but not in the same cells of the animals of the later passages. A peculiar form of rabies seen in rabbits and dogs is also described, in which progressive emaciation was the chief symptom. The disease ran a more or less chronic course, but in some cases was comparatively rapid. The condition was experimentally demonstrated as true rabies on sub-passage to other animals which showed typical symptoms. Experiments are also detailed of an attempt to make a quantitative estimation of the bactericidal action, if such existed, of the sera of patients undergoing anti-rabic treatment. Patients were selected at various stages. The experiments failed to demonstrate the presence of bactericidal action towards rabbit virus in any of the sera. The sera of normal guinea-pigs, rabbits, monkeys, and men were tested in the same way with negative results.

JOURNALS AND MAGAZINES.

Jahreskurse für Ärztliche Fortbildung. A monthly review, each part containing about 100 pages with illustrations. Price 3 marks separately, 16 marks for the year. Published by J. F. Lehmann, München.—This post-graduate course of articles for medical men represents a new attempt to solve the problem of condensing the vast amount of new work on medicine and the allied sciences into a small and readable form. The work is to appear in 12 parts—i.e., monthly—each year, and each part is devoted to some special department. The coöperation of over 30 distinguished professors and teachers has been secured, and a glance through a list of their names will assure the reader of the high authority which their work commands. The work is really in the nature of a medical annual, for each subject is only reviewed once a year, but the method of monthly publication has this enormous advantage—that the reader has plenty of time to look at one subject before the next is presented, whereas the annual, which appears in a single volume, is probably never read through by even the most systematic student. In the space at our disposal it will be hardly possible to give more than a list of headings of the various subjects treated in the January and February numbers. After a comprehensive introduction by Dr. Sarason, the problems of general biology are discussed by Professor Lubarsch. These include: heredity; the transmission of acquired characters; the relative parts played by maternal and paternal parents in the transmission of individual characteristics; the rôle of the nucleus in hereditary transmission; Mendel's laws; fertilisation, and the influence of external conditions upon fertilisation and development; the relation of tissue growth to normal and pathological stimuli; tumours and their relation to developmental defects, dermoids, teratomata, &c.; teratoid tumours produced by injection of living cells into rats; Jensen's mouse cancer; parasitic theories of cancer; the relation of fat and carbohydrates to normal and pathological cell structure. In the February section the diseases of the heart and lungs are treated of, the former

by Professor Ortner and the latter by Professor Brauer. The subject of functional heart disorders, with special reference to diagnosis, is dealt with at some length, Katzenstein's method of noting the difference in blood pressure produced by occlusion of the femorals and Koranyi's $\frac{\Delta}{NaCl}$ formula being especially noticed. Other subjects in the first section are: arterio-sclerosis in its general aspects and also in relation to adrenal secretion; cardiac hypertrophy; angina pectoris; symptoms of arterio-sclerosis in other organs; the thyroid heart; the distinction between mechanical and toxic effects of goitre upon the heart; Hoffmann's theories about the relation of the suprarenals to thyroidism. Lung diseases are considered almost entirely from a surgical standpoint. The method of accurate diagnosis by means of the X rays; the advantages of the differential pressure apparatus in operations on the chest; the comparison between the positive pressure system of Brauer and the negative system of Sauerbruch are considered. The relation of collapse of the lung to its physiology and pathology is carefully discussed with especial regard to the production of artificial pneumothorax. The effects of this proceeding upon the circulation and upon the excretion of mucus are described; next the mechanics of artificial pneumothorax, the behaviour of the other lung and of the mediastinum. The practical outcome of these considerations in the treatment of disease is divided under the following heads: tumours; foreign bodies; non-specific pulmonary suppuration, acute and chronic; bronchiectasis; tuberculosis; and emphysema. The relative advantages of pneumothorax, excision of diseased areas, and of drainage are considered under the various diseases. This annual review is notable for the great interest and authority with which the various subjects are treated rather than for any attempt to take note of all important work done in each department. The references to German literature are very full, whilst those to foreign writers are somewhat meagre.

The Fourteenth Bulletin of the Sleeping Sickness Bureau.—In this Bulletin a *résumé* is given of the present state of our knowledge regarding Glossina palpalis, and points are indicated on which further investigation is needed. The facts are summarised with respect to the breeding grounds of the insect, the duration of its pupal stage, artificial breeding, character of the shade essential for its existence, seasonal variations in its numbers, temperature and humidity on which the fly is dependent for the fulfilment of its vital functions, alternation of species, diet of tsetse flies, the relation of human traffic to the distances travelled by them, the means which serve to check their increase, the habits of the fly, the duration of its life, and how protection against its bites can best be secured. In discussing the question of the prevention of animal trypanosomiasis, reference is made to an account given by Dr. Andrew Balfour of a root which the natives of the Bahr-el-Ghazal mash up in a fresh state with cold water and with which they dose their mules and cattle, also washing and rubbing them down with the mixture with a view of preventing the tsetse flies from alighting on them. It is asserted that any flies which do alight on the animals thus prepared drop off dead; usually, however, the odour evolved from the application keeps the flies at a distance. The plant is believed to be the *Vitis producta*, and steps are being taken for the investigation of this root and its uses in the Wellcome Research Laboratories at Khartoum. As bearing on this matter, mention is made of an observation of Dr. Livingstone, the African traveller, who when passing through the region north-east of the Victoria Falls had his attention directed by the natives to a root which was said, when pounded and sprinkled over oxen, to disgust the tsetse flies so that they did not bite these animals. Unfortunately, Livingstone for want of time was unable to investigate the truth of the natives' statement. Up to the present time it must be admitted that little success has attended the efforts made to secure protection against the bites of tsetse flies by the application of various substances to the human skin. Dr. A. W. G. Bagshawe, the editor of the Bulletin, expresses the opinion that our knowledge of the habits and life-history of Glossina palpalis, or of other species of this genus, does not grow as quickly as it should, and to gain the knowledge needed many more workers should be in the field. He refers to the time and energy expended in Africa on the administration of drugs to advanced cases of sleeping sickness where the chances of success are but faint, and suggests that a portion at least of such time and energy might be usefully devoted to the study of the insect, in the absence of which the malady would cease to occur. The problem of the trypanosome diseases of Tropical Africa and that of the insects which transmit them are one and the same; Dr. Bagshawe therefore contends that our hold over these scourges will always be uncertain until we have a cheap and effective method of suppressing tsetse flies, exterminating them in some places, and reducing their numbers in others. This method, however, is still to be discovered. It is suggested, meanwhile, that a trial might be given in suitable areas to Maldonado's simple and easy plan, which we described in THE LANCET of Feb. 12th, for reducing the tsetse flies in a given locality. The Bulletin contains a number of other very interesting articles, among which we may mention those dealing with the diagnosis of human trypanosomiasis, the influence of other infections upon this disease, the mode of action of atoxyl, the treatment of trypanosome infections, and immunity in the trypanosomiasis of rats.

PELLAGRA INVESTIGATION COMMITTEE.

A MEETING of the Pellagra Investigation Committee was held on Monday, March 14th, when there were present Sir T. Lauder Brunton (in the chair), Mr. E. E. Austen, Fleet-Surgeon P. W. Bassett-Smith, Mr. R. S. Fraser, Dr. Clement Godson, Dr. R. T. Leiper, Sir William Leishman, Dr. G. C. Low, Dr. J. M. H. MacLeod, Sir Patrick Manson, Sir John McFadyean, Dr. G. Pernet, Professor Ronald Ross, Dr. L. Sambon, Dr. F. M. Sandwith, Professor W. J. R. Simpson, Miss A. Lorrain Smith, Mr. Otto Stapf, and Mr. J. Cantlie (honorary secretary).

It was resolved that Dr. Sambon should be instructed to proceed at once to Italy. The money actually in hand amounts only to one-fifth of the minimum sum required, but the Committee hope to be able to secure such sums as have been offered conditionally, and have meanwhile formed amongst themselves a guarantee fund which was liberally subscribed to.

The Committee hope to continue to receive support in order that they may be enabled to allow Dr. Sambon to stay a sufficient time to complete his investigations. The donations so far received are:—

	£	s.	d.
Lord Pirrie, K.P.	5	0	0
Sir Charles MacLaren, M.P.	1	1	0
Mr. Henry Bubb	20	0	0
Countess Cezaresco ...	5	5	0
Jeyes' Sanitary Compounds Co.	20	0	0
Sanitas Company	10	10	0
Mr. Arthur F. Levita ...	10	10	0
Mr. Aug. Oddenino ...	5	0	0
Alfred de Rothschild ...	5	0	0
London School of Tropical Medicine ...	10	10	0
Liverpool School of Tropical Medicine ...	10	10	0
Commendatore Polenghi	10	10	0
Messrs. Oppenheimer, Sons, and Co.	5	5	0
Mr. F. E. Lawson	1	1	0
Mr. Albert Profumo ...	2	2	0
Mr. T. Holloway	1	1	0
Mr. W. H. Lever	5	0	0
Mr. V. B. Tritton	5	0	0
Mr. G. A. Tonge	5	0	0
Mr. Harry W. Birks ...	1	1	0
Mr. Bertram L. Hue Williams	2	2	0
Mr. J. B. Hurry	2	2	0
Hon. Miss Blyth	1	1	0
Mrs. Barney Barnato ...	5	5	0
Admiral Beatty	5	0	0

Captain Siler, United States Army, was officially welcomed as a member of the Field Commission, and two assistants, M. Baldini and M. Amoruso, were appointed to accompany Dr. Sambon. The Field Commission will leave next Saturday. Dr. Sambon left for Italy on March 20th.

THE LANCET.

LONDON: SATURDAY, MARCH 26, 1910.

The Paddington Dispensary for Tuberculosis: Some General Reflections.

CERTAINLY among the most important steps made in the modern struggle of the community against tuberculosis was the foundation at Edinburgh of the Royal Victoria Dispensary for Consumption by Dr. R. W. PHILIP in 1887. That movement has been imitated and developed in many parts of the world, not only on the continent but also on the other side of the Atlantic. Many will remember the interesting ceremony which was performed last October by the KING when he completed an electric circuit at Chichester which opened the Royal Edward Institute for the study and treatment of tuberculous disease in Montreal, an institution founded on the lines of the Edinburgh dispensary system. Probably fewer are aware that a similar dispensary for the prevention of consumption has been in active operation for the past year in London, and that Paddington claims the honour of having shown England the lead in the practical control of the most devastating endemic disease which afflicts this country. On March 17th H.R.H. Princess MARIE LOUISE of Schleswig-Holstein was present at the first annual meeting of the supporters of the Paddington Dispensary, which was held at the Paddington Baths under the chairmanship of the mayor of that borough, and the meeting had the advantage of listening to a clear and modest exposition of the work that has been effected by the dispensary movement from the lips of its only begetter, Dr. PHILIP, to a commendation of its results from Sir MALCOLM MORRIS, and to other speeches by Dr. R. DUDFIELD, to whose coöperation as medical officer of health of the borough the work owes a great deal, Mr. H. LIDIARD, Mr. H. P. HARRIS, M.P., Canon WYNDHAM, and Sir JOHN BROADBENT. At this meeting the report was adopted and the provisional committee which has controlled the working of the dispensary since its foundation under the chairmanship of Dr. DUDFIELD was elected an executive committee for its future management. We are enabled to print this week a complete account of the methods and work of the dispensary from the pen of Dr. D. J. WILLIAMSON, its executive medical officer, who, with the coöperation of the dispensary nurse, Miss GOODCHILD, has worked strenuously and unremittingly to establish the dispensary on a successful basis and to win the confidence of the poor inhabitants of Paddington, although, curiously enough, we heard no acknowledgment made at the annual meeting of their labours and none appears in the report. We are sure, however, that they rest content upon the results of a year which included the repeated examination of 877 new patients, who attended at the dispensary in all 5310 times, the paying of 2371 visits at the patients' own homes, the systematic examination of the sputum of all suspected cases, and the establishment of a system of case records, which we are satisfied from its inspection has already become a valuable nucleus for a library. Such a library it is proposed to establish at the dispensary for the benefit of those interested in either the medical or sociological aspects of tuberculosis. We commend Dr. WILLIAMSON'S section of the report, with its appalling genealogies of disease, to the attention of all students of public health.

The aim of the work upon which Dr. WILLIAMSON and his committee are engaged is prevention, although every step is taken for the physical amelioration of tuberculous patients that the social conditions of each individual case will allow. The chief enemy of the work is the routine bottle of medicine; its chief aid the practical application of the lessons of science and of experience to the home conditions of the poor. In the phrase of Sir MALCOLM MORRIS, the organisation of the dispensary for tuberculosis "tracks tuberculosis to its lair" and strives to eliminate the infection from each new focus brought to light, no less than to remedy and to render innocuous the actual carriers of the disease. This is achieved by establishing a suitable house in the centre of a district where tuberculosis is rife, and by getting into touch with every agency which is likely either to discover the whereabouts of tuberculous cases or to assist in their alleviation. Such agencies are the municipal office of health, the out-patient departments of local hospitals, the local Poor-law authorities and charitable agencies, and, not the least important, the medical practitioners of the district, to whom the dispensary is an auxiliary and never a rival. It is a sound feature of the system that the treatment of no case which is already in medical hands is undertaken without the written consent to such a transference of responsibility being first obtained from the medical man in attendance. We need hardly say that in work amongst the classes for whose benefit the tuberculosis dispensaries are principally intended there cannot be much question of a transference of professional emoluments, but it is important to free the new organisations at the outset of their valuable career from a reproach which has been levelled against the out-patient departments of many large hospitals and not without justice. As a matter of fact, the experience both at Edinburgh and at Paddington is that private practitioners frequently send their poor cases to the dispensary either for consultation or for treatment, whilst the out-patient departments of general hospitals are not less quick to free themselves of the heart-breaking responsibility of cases for which their system of treatment, allowing of no home supervision, is confessedly inadequate. When a patient has been seen at the dispensary and pronounced tuberculous, his home is visited by the nurse, who fills up a careful register of its hygienic and economic conditions, which is countersigned by the medical officer after he has paid a visit for himself. His treatment of each case is thereafter conditioned entirely by the environment of the patient. He gives personal advice upon the best methods of obtaining open-air treatment in a small tenement, to certain cases he lends open-air shelters,

and he always refrains from ordering expensive nourishment for a person who is obviously unable to obtain it. Where financial assistance is necessary for the proper feeding of a patient, the visiting staff of medical officer and dispensary nurse obtain it through one of the philanthropic agencies with which they are in contact. Where they are assured that a patient is incurable and is in such a condition as to afford a menace of contagion to his housemates, they use every endeavour to secure his removal to a suitable institution; and where the case is recognised so early that it stands a fair chance of cure by sanatorium treatment, they secure admission to such an institution; while, if the patient be a breadwinner, they commend his dependents to the care of such charitable agencies as are willing to coöperate. Whatever kind of relief be given, overlapping is avoided, and care is taken to recommend only that particular form of relief which either holds out hope of benefit for the case, or is desirable in the interests of those who come into contact with the patient. Important as the care of the patient is, the dispensary system regards it as secondary to the care of "contacts." Wherever a case of tuberculosis comes under the notice of the dispensary a thorough attempt is made to examine the patient's near relatives, and in the event of any suspicious signs, however indefinite, being found in them they are given the benefit of the doubt by being treated not as healthy but as "pre-tuberculous subjects," and are instructed in the hygienic way of life requisite for their redemption from a worse fate. As Dr. WILLIAMSON writes, this entails a vast deal of work that can only be carried out by the systematic coöperation of various social agencies. "The improvement of the dwellings, the teaching of domestic economy and cookery, the inculcation of thrifty, sober, and cleanly habits, the care, nourishment, and education of children, and the finding of suitable employment for the consumptive breadwinners are some of the problems concerned." There has recently been much talk of a social service movement in London and other big cities. Here, in the establishment of such a circle of defences against disease, want, and misery as an anti-tuberculosis dispensary entails, will surely be found a method of service which many charitable persons might render who would do much for their poor neighbours did they only know how to do it wisely. And the wisdom can be acquired.

From an investigation of the Paddington Dispensary we are convinced that Dr. PHILIP has given the world a most businesslike aid to the solution of the problem of tuberculosis, and we are pleased to welcome such a worthy copy of his Edinburgh Dispensary to the metropolis. It is only surprising that it has taken so many years for the movement to reach us. Not a little of its success is due to a recognition of the fact that when funds are limited it is useless to pour them out on sanatorium treatment for advanced cases of tuberculosis, and even experience has shown that many early cases do remarkably well at home under proper supervision. It is encouraging to be told that the Tuberculosis Exhibition which visited Paddington last year has had so marked an educative influence on the dwellers in the slums as to render easier the work of the dispensary staff. It is also encouraging to learn that the work and staff of the dispensary are to be doubled, since the people of North Kensington have expressed a desire for the system to be extended to that district and have guaranteed to provide the necessary additional revenue. Another imminent innovation is the establishment of a school in a suitable house to be run upon "anti-tuberculous" principles, the London County Council having undertaken the financial responsibility. Considering the acknowledged frequency of tuberculosis amongst children of school age, to which the founder of these dispensaries has called attention recently in our columns, we welcome the breadth of mind displayed by the Council in thus giving its support to the movement. The home treatment of tuberculous patients on similar lines has been firmly established in Ireland, as may be seen from the summary of the report of the Dublin Hospitals Tuberculosis Committee which appears on another page; and we are glad to learn that such a dispensary is to be established in Marylebone. We hope to see before many years an anti-tuberculosis dispensary established in every metropolitan borough and in the large cities throughout the country. Then will the advance against tuberculosis, for which we have been waiting for so many years, be made effectively because all along the line. A medical man has shown the way, and it behoves our profession to bring tuberculosis dispensaries to the notice of those who take a personal interest in the welfare of the people.

The Medical Treatment of School Children.

THERE can be little doubt, we presume, that it should be among the first duties of a strong Government, whenever the state of public affairs shall be such as to permit the existence of one, to turn its attention to the reports of the Royal Commission on the existing state of the Poor-laws, and to remodel these laws by some comprehensive enactment which will make proper provision for medical as for other forms of relief. But the strong Government is not yet in existence; and, even when it comes into being, it may not be disposed to exhibit any marked haste in dealing with a series of thorny and complicated questions. In the meanwhile it will be in accordance with many laudable precedents if Englishmen strive to do the best that is possible with faulty materials, and if they regard their school system less as a source of problems than as an agency which, perhaps with a little straining here and there, will permit a good work to be carried to a satisfactory conclusion. We are led to these remarks by observing that certain medical officers of health, some members of hospital staffs, and more than one of our own correspondents, seem to regard the present situation as one presenting insuperable difficulties. Let it be granted that inspection which is not followed by a quick and systematic routine of treatment is considerably wasted; and let it also be granted that these are difficulties in the provision of that treatment. We trust that in this position school medical officers generally, who in the counties are now practically almost universally the county medical

officers of health, and the medical officers of health who are associated with them, will earnestly seek how to turn existing opportunities to good account, instead of discussing the imperfections of detail which may, no doubt, be discovered in them at every turn.

Difficulties which seem formidable upon paper have a way of disappearing when they are resolutely faced, and it is more than probable that the experience of the present manifestly transition period may be of signal assistance when the time comes for considering and for establishing upon some sound basis of principle the manner in which the sickly or feeble child should be dealt with by the administrators of public assistance. One thing at least appears to us to be certain, and it is that the responsibility of the parent in the matter of the sick child must be firmly upheld if the school curriculum is to be a benefit to the community. For genuine poverty there should be prompt and adequate assistance; but the parent whose child is deprived of proper food, or of proper medical treatment, or is exposed to infection, by his or her own fault, should be made answerable for the consequences of such misconduct. In many matters the law is an effective educator, and education concerning children should not be confined to the children alone. It is probable that the Parliamentary representatives of labour would not be opposed to an enactment by the operation of which the respectability and the self-respect of their constituents would be indefinitely increased. In the meanwhile, and until further legislation can be obtained, it is desirable that free use should be made of the power of excluding diseased or verminous pupils from the schools, and of then fining the parents for their non-attendance. In many cases and localities, however, proceedings of this kind would fail to reach to the foundations of the evils which are to be dealt with, and it is manifestly necessary to provide some means by which the most commonly prevailing school diseases can be effectively treated at a cost not beyond the means of the average parent, and gratuitously in the case of the necessitous. Here, again, the question is still in the experimental stage, and it seems probable that different methods may find favour in different localities; but it is one concerning which medical opinion should be predominant. It seems to us to be incumbent upon the profession to make its voice heard in relation to the matter, and to refuse its coöperation to any scheme in which its interests and its dignity are not sufficiently consulted. The method for dealing with the situation by an alliance between hospitals and school committees is receiving trial. It has its obvious conveniences, upon which we have frequently dwelt. This machinery of inspection is in the hands of the county councils, themselves public health authorities and in a good position to approach the large general hospitals and invite coöperation between two highly organised services for the carrying out of a joint task. The method is also not without its critics, who find that the arrangement does not add to the prestige of the hospitals concerned because it contains a risk of interference with their management, and may be prejudicial to the practitioners in the neighbourhood of the medical school. Of the first objection we think nothing; while the second is not so serious as it looks, for of the patients who attend the out-patient departments of the hospitals as the result of school inspection but a tiny proportion would ever be paying patients.

The establishment of school clinics to be worked for proper remuneration by the medical men of the locality has not yet met with extended trial. Here the obvious convenience of the arrangement is absent because a new machinery has to be organised, but many of the grounds for criticism can be abolished. It is interesting, therefore, to see that an arrangement of this kind has been entered into at Hampstead, where the medical practitioners have formed themselves into an association under the title of the Hampstead Public Medical Service, and have agreed with the London County Council to provide treatment for an estimated number of 400 children suffering from affections of the eye, ear, nose, and throat, and from ringworm, at an estimated cost of £155 per annum. It is regrettable that it has not been found possible to utilise the out-patient buildings now lying idle at the Hampstead General Hospital for the Public Medical Service. We understand that negotiations were opened between the council of the hospital and the Hampstead Council of Social Welfare to a similar end, but that they were unable to come to terms. Incidentally we believe such a *rapprochement* between the hospital authorities and the practitioners of the neighbourhood would tend to the healing of a professional sore that has remained open too long. But whatever buildings be used for the new service the medical men of Hampstead appear to have taken the initiative into their own hands, and their example may be followed in other parts of the country if their efforts end in practical success. Recently we were able to announce that the medical practitioners of Norwood are proposing to form a similar school clinic in coöperation with the London County School. Where for this reason or that the facilities offered by a general hospital are not available it may certainly be advisable for medical practitioners to form a school clinic.

Varicocele and the Public Services.

IT may be remembered that some years ago[1] we published a letter from Colonel FRANK HOWARD, of the Army Medical Staff, inviting a discussion of the question whether varicocele should be a bar to admission to the services. Many surgeons recorded their views, and although there were slight differences of opinion as to the exact mode of origin and the significance of the condition, there was a wonderful unanimity as to the general harmlessness of varicocele, both to the life and comfort of the individual and to the integrity of the testis. While some, with Mr. HARRISON CRIPPS, were inclined to regard this dilatation of the spermatic veins as of physiological origin and connected with a temporary restraint of the functioning of the testis, most of those who joined in the discussion looked upon the varicocele as pathological in nature but of trivial importance both as to symptoms and as to consequence. We were not without definite hope that the discussion in the columns of THE LANCET might have induced the authorities to reconsider the question of regarding the possession of a

[1] THE LANCET, Sept. 23rd, 1905, p. 923.

varicocele as an obstacle to admission to the services, but so far as we are aware nothing has been done—and daily the rejections occur. It is the practice in most centres of enlistment for the Army and Navy when a man who has a varicocele but is otherwise an unobjectionable recruit is rejected, to tell the candidate that if he has an operation performed on the varicocele he can come up again before the authorities, when he will be admitted. In most cases he goes to a hospital and asks to have the operation performed so that he may enter the service. Nearly every surgeon attached to a general hospital operates yearly on a large number of these young men, and in the vast majority of them no operation is needed. A few surgeons refuse to operate for varicocele, for they consider that the operation, being absolutely unnecessary, is unjustifiable; but most surgeons feel that it is hardly fair to the patient to refuse to remove an obstacle which stands, however wrongly, between a desirable candidate and his admission into a public service. There is much to be said on both sides with regard to the proper course in the present position of affairs, but the real question is whether it is reasonable that young men, in other ways desirable as soldiers or sailors, should be refused admission in consequence of possessing a varicocele unless they submit to an operation.

What are the admitted disabilities and disadvantages attached to a varicocele? Though some have asserted that it leads to fibrotic changes in the organ and so causes atrophy, this effect is denied by most of those who have devoted especial attention to the subject; but even if this is true the disease, if disease it be, is nearly always confined to one side, and therefore it is somewhat difficult to see how this atrophy can affect harmfully either the individual or the State. A more specious argument is contained in the assertion that the possession of a varicocele incapacitates a man for strenuous or continued exertion on account of the aching and the dragging pain induced by hard work. The fact is, and this may easily be ascertained by anyone in the habit of examining large numbers of men, that in the vast majority of cases a varicocele gives rise to no symptoms whatever; most of those who would be described by some as suffering from varicocele are not aware from any sensation that anything is wrong with the contents of the scrotum until informed by a surgeon. It is true that in a small percentage of cases a slight uncomfortable sensation is experienced, but this is generally completely relieved by a suspensory bandage. Very rarely indeed has any real pain attended a varicocele. Cases have been recorded in which exertion has caused acute suffering, but so rare are these cases that many surgeons of large experience have never met with one. It is not improbable that in many of those instances where severe pain is described as present a neurotic element magnifies the suffering. In some cases there can be little doubt that the alarming prognostications of quack literature are responsible for the pains felt in a varicocele. Further, it has to be borne in mind that though some dilatation of the spermatic veins is very common in young adults it is less frequently seen in middle age, and it seems to be clear that there is a form of varicocele which may disappear spontaneously. The main reason, however, for refusing to admit into the services men with varicocele is that the condition forms a convenient excuse for the malingerer. When a man wishes to shirk hard work or a toilsome march it is much more difficult to refuse to admit his plea of pain if he has an obvious lesion which may possibly be accompanied by pain, and doubtless malingerers have been inclined to avail themselves of this excuse. But actual experience shows that varicocele, which exists to no small extent in the services in cases where it has developed after admission, is extremely rarely advanced as a reason for escaping hard work. Many army surgeons experienced in active service have never met with a case, and rare as malingering is from this cause amongst private soldiers, it is, we believe, rarer or unknown amongst officers. Is it wise, therefore, to debar desirable candidates from entering the services if they suffer from varicocele unless they are willing to have an operation performed? Even the matter of expense is not negligible. A would-be recruit can certainly have the operation done free of expense in a general hospital, but those who wish to enter as officers must incur the cost of the fee of the surgeon and the expenses attendant on the operation. And the operation is not free from risk to the integrity of the testis, though there may be no danger to life. Many cases have occurred in which atrophy of the testis has followed operation for varicocele as the result of interference with the blood-supply or nerve-supply of the organ.

The question therefore arises, Is it justifiable to require a young man to undergo an operation for a condition which in itself hardly ever interferes with the most strenuous occupation, the operation itself being not absolutely free from risk of injury to the testis? Experience has shown that the condition is brought forward by malingerers with very great rarity as an excuse for shirking work. The answer to the question seems to us clear. Varicocele should not of itself be a cause of rejection of candidates for the services who are otherwise suitable, and candidates should never be advised or required to submit themselves to operation for its cure. At any time to reject a young man, in every other way eligible for one of the services, on account of a lesion of so little importance, would be unwise, but at the present day, when the supply of suitable recruits is definitely diminishing, such action cannot be defended. It is undoubtedly due to the difficulty of carrying out reforms in Government Departments that this matter has not received the attention which it merits, but we may not unreasonably hope that those on whom the authority rests will reconsider their position, and will effect a not unimportant reform in the medical requirements for admission into the Army and Navy.

FOREIGN UNIVERSITY INTELLIGENCE.—*Erlangen:* Dr. Ludwig Seitz of Munich has been appointed to the chair of Midwifery and Gynæcology, with the charge of the University Clinic for Women, in succession to Dr. Philipp Jung, who has gone to Göttingen.—*Greifswald:* Dr. P. Kroemer of the Berlin Charité has been appointed to the chair of Obstetrics and Gynæcology and Director of the Women's Clinic in succession to Professor M. Henkel, who is going to Jena.—*Limoges:* Dr. Eymeri has been appointed Professor of Physiology in succession to Dr. Descazals.

Annotations.

"Ne quid nimis."

ELECTION OF PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AT a Comitia at the Royal College of Physicians of London held on Monday last Sir Thomas Barlow was elected as President for the ensuing year. The choice had been generally anticipated, and was certainly merited. Sir Thomas Barlow is a worthy addition to the long list of those who have occupied the Presidential chair and will carry with him the good-will of the profession. Widely recognised as a great physician, his energy and tact are well known, and his speeches at the College have been always characterised by a complete knowledge of his subject and a firmness which tends to carry conviction. We congratulate him on his election, which clearly expressed the general wish of the College. In thanking the Fellows for electing him he took the opportunity of referring in graceful terms to the great services which had been rendered to the College by Sir R. Douglas Powell during his five years of office, for many important and anxious movements had arisen during those years, when he invariably exhibited the impartiality and firmness so essential in a President. For our part we may take the liberty of adding that in retiring from office Sir R. Douglas Powell carries with him the gratitude of the profession for his efforts in ruling over many discussions at the College of Physicians which involved questions of the utmost importance. In addition he represented the College at non-professional gatherings in a manner which could only inspire confidence in the profession of which he is so eminent a member.

THE EXHIBITION OF HYGIENE, DRESDEN, 1911.

SOME years ago, on the occasion of a conference of hygiene at Dresden, the suggestion was made that a large exhibition of all matters appertaining to hygiene might be held with advantage to the public and to the various professions concerned with hygienic matters. The idea was well received, but as it necessarily involved a very elaborate organisation no definite steps were taken at first to realise it, the prime movers in the matter obviously considering that a certain lapse of time was required for it to ripen. Within a short time, however, a wealthy member of the conference, Geheim-rat Ligner, made up his mind that an exhibition should be held, and that not merely a Dresden affair but a large international exhibition. The determination of this financier smoothed the way and within the course of some months the preliminary steps were taken. In 1908 the scheme took shape, and it was announced early last year that the King of Saxony had accepted the office of patron, that the German Imperial Chancellor was one of the honorary presidents, and that the committee included some of the most eminent hygienists and Government officials in the Empire. Certain grants were made by the treasury of Saxony and of the municipality of Dresden, the German Government followed suit, and private subscriptions headed by Geheim-rat Ligner soon placed to the credit of the committee a sum sufficient to ensure success as far as Germany was concerned. The exhibition buildings and grounds were placed at the disposal of the committee gratuitously, and the King on learning that more space was required offered a part of his Royal Park for the purpose. At present the preparations are advancing well, and there is every indication that this "Healtheries" Exhibition of 1911 will be the biggest affair of its sort that has ever been organised. The actual exhibition will comprise a number of sections dealing with every branch of scientific hygiene, and illustrating everything which tends to affect the health of the public. There will be object-lessons of advances and of failures, records of social factors in hygiene, and indications for future progress. A special section will illustrate the ravages of certain widely spread diseases, such as cancer, tuberculosis, syphilis, and alcoholism. The industrial side of hygiene will be included, and there will be a historical section. It is intended to hold conferences during the six months following May, when the exhibition will open its doors. The Governments of France, Italy, Holland, Spain, and other countries have already signified their intention of taking a part in the exhibition, and national committees have already been formed. A slight accidental delay has occurred with regard to the issuing of the official invitation from the German Government to the British Government, but in the meantime we understand that some useful semi-official reconnoitring has been undertaken. A few weeks ago Professor Pannwitz was delegated by the committee of management in Dresden to visit England to stir up interest in the exhibition, and more especially to feel his way with regard to the attitude which the Government departments would assume when the matter was officially brought to their notice. A conference has recently been held in London, attended by a fair number of distinguished scientists and practical hygienists, considering the fact that only two days' notice could be given. Professor Pannwitz delivered a lucid address, in which he set forth the objects of the exhibition, and asked for the active coöperation of British hygienists. It was agreed that pending the reply of the British Government to the invitation which Professor Pannwitz announced would be sent from Germany in the course of a few days, the members present should form the nucleus of the British executive committee, and that the organising work should proceed under the direction of Mr. H. W. Armit, supported by Mr. Sigle as business manager. Professor Pannwitz announced his intention of returning to London in a month's time, when he hoped to attend a second, but larger, conference, at which the full honorary and working committees could be appointed. He expressed the hope that the hygienists of Great Britain would put their best foot forward, and by taking a prominent part in the exhibition give the world fresh evidence that this country has the reputation of being a leader in matters of public health.

THE WEST AFRICAN MEDICAL STAFF.

THE subcommittee appointed by the Advisory Medical and Sanitary Committee for Tropical Africa to consider the question of the course of study to be taken by West African medical staff officers of five years' standing, and the application of these arrangements to officers who have already completed five years' service, has decided to recommend that the course of study should be the three months' course of the West London Post-Graduate College or the London School of Clinical Medicine at the Seamen's Hospital, Greenwich (or such other post-graduate course as may be approved by the Secretary of State on the application of the governing body concerned), in clinical medicine, clinical surgery, and pathology. The subcommittee recommends also that officers should be allowed to substitute for this course either: (1) the course of study and examination for a recognised diploma in public health, sanitary science, or State medicine; or (2) the course of study and examination for a further medical or surgical diploma or degree (in this case no fee should be paid by the Colonial Government, and the officer should only be given his railway fare and the allowance for lodging expenses); or (3) if the Governor, on the recommendation of the principal medical officer, approves, a course of study in some special branch of medical or surgical practice

(e.g., ophthalmology, dentistry, dermatology, genito-urinary diseases, &c.), or an advanced course at the London or Liverpool School of Tropical Medicine. As regards the application of these arrangements to existing officers, the subcommittee was of opinion that in making its recommendations as to which officers of upwards of five years' standing should be placed on the new scale, the principal medical officers should not take into consideration the question whether the officer has already taken a course of post-graduate study of any kind. All medical officers so recommended should be required to take the approved course or a substitute for that course, or, should they claim exemption, to satisfy the Secretary of State that they have already taken such a course of study. The recommendations of the subcommittee seem thoroughly wise to us. They lay proper stress on the necessity for the officers of the West African Medical Staff keeping abreast of scientific knowledge, general and special, while they are sufficiently elastic.

DYED EASTER EGGS.

THE custom of colouring eggs at Easter-time is innocent enough, but some discrimination needs to be made in regard to the choice of a dye for the purpose. It is true that the tinctorial power of aniline dyes is very intense and that therefore even a highly coloured egg would contain a very infinitesimal quantity of colouring substance, but we have known the dye to permeate the shell and to saturate the real egg substance. This might well happen, since in order to colour eggs they are immersed for some time in a bath containing a hot solution of the dye. As long as there is any doubt as to the innocuousness of the colouring agent the eggs should certainly not be eaten. Amongst the dyes used for the purpose are (1) vesuvin or Bismarck brown; (2) fuchsine (violet-red); (3) eosin (red); (4) methyl violet; (5) naphthol yellow; (6) azo-orange; (7) naphthol green; (8) methylene blue; (9) saffron substitute (yellow); and (10) safranin (pink). Of these Nos. 5, 8, 9, and 10 have been shown to be poisonous, and therefore their use should be forbidden. There is really no excuse for using harmful colouring substances in foods, since there is nowadays such a wide choice of perfectly harmless materials for the purpose. Still, injurious materials may be used in ignorance of their actual nature, and some of them we have seen actually recommended in trade manuals.

IRISH URBAN MORTALITY IN 1909.

THE marked excess of mortality in Irish towns, compared with that which prevails in the largest towns in England and Wales, implies serious defect of sanitary condition and of sanitary organisation and administration. In the 22 town districts of Ireland, for which the Registrar-General publishes weekly returns of vital statistics, with an aggregate enumerated population of 1,142,308, the crude death-rate during the 52 weeks of last year was equal to 19·2 per 1000, whereas in the 76 largest English towns the crude rate during the same period did not exceed 14·7. Thus the rate of mortality in the Irish towns last year exceeded that in the English towns by 30·6 per cent.; or, stated in another way, in equal numbers living, 131 deaths occurred in the Irish towns to each 100 deaths occurring in the English towns. It is true that the age-constitution of the Irish population implies a higher death-rate than that of the English population, owing to the high rate of emigration from Ireland of young adults, among whom a low death-rate naturally prevails. The effect of this abnormality of age-constitution in the Irish population is, however, probably less marked in town than in rural populations, and therefore cannot account for any considerable proportion of the excess of the death-rate in Irish towns. In the comparison, moreover, of the mortality statistics of the 22 Irish town districts with those of the 76 English towns, it must be borne in mind that while the population of the Irish towns averaged only 52,000, the average population in the English towns was 216,000; and further, that the population of 16 of the 22 Irish towns ranged between 7588 and 13,426, whereas the smallest of the English towns had a population exceeding 50,000. The death-rate last year among the 22 Irish towns was equal to 20·9 per 1000 in Dublin (against 14·2 in London), 18·2 in Belfast, 22·1 in Cork, 17·2 in Londonderry, 16·7 in Limerick, and 19·1 in Waterford; while in the 16 smallest town districts the mean rate was equal to 17·7 per 1000. It is noticeable that the rate of mortality from the principal epidemic diseases last year in the 22 Irish towns did not exceed 1·4 per 1000, and corresponded with the rate from the same diseases in the 76 English towns. The death-rate, however, referred to "fever" (principally enteric), which affords a reliable test of sanitary condition and of the effectiveness of sanitary administration, was equal to 121 per 1,000,000 in the Irish towns, whereas it did not exceed 58 per 1,000,000 in the 76 English towns. Infant mortality, which in the whole of Ireland has long been considerably below the rate prevailing in England and Wales, shows a marked excess in the Irish towns. In the 22 town districts of Ireland the deaths of infants under one year of age during last year was equal to 132 per 1000 births registered, whereas in the 76 English towns it did not exceed 118 per 1000. In Dublin the death-rate of infants was equal to 141 per 1000, and in the five next largest Irish towns it averaged 134; in the 16 smallest town districts the mean rate of infant mortality was equal to 105 per 1000. These mortality statistics point conclusively to the unsatisfactory sanitary condition of the Irish towns, and suggest the necessity for the greater activity of the local sanitary authorities. It is, however, an unfortunate fact that the death-rate in Ireland has been practically stationary in recent years, while the recorded rate of mortality in England and Wales has shown a steady and continuous decline.

SPIRIT OF NITROUS ETHER IN MIXTURES.

SWEET spirit of nitre is a frequent source of trouble in dispensing, and when anything goes wrong with an apparently simple mixture containing it, it is quite usual, and often quite proper, to put the blame on this ingredient. A correspondent recently asked why it is that an emulsion containing almond mixture, tincture of squill, ipecacuanha wine, and sweet spirit of nitre "sometimes blows up," and almost from force of habit we look for the explanation to the spirit of nitrous ether. The emulsion contains only 1 drachm of the last-named ingredient in 10 ounces, so that under ordinary conditions an explosion would not be expected. It is not improbable, however, that there is something wrong with the almond mixture. This is made from compound powder of almonds which contains about 8 per cent. of gum acacia; some Australian gums contain tannin, and if the gum used in the preparation of the compound powder of almonds is Australian gum, the explanation of the explosion is not difficult. Tannin is incompatible with sweet spirit of nitre, the effect of mixing the two being to decompose the ethyl nitrite, while oxides of nitrogen are evolved. The reaction in the present case would be slow, as the amount of tannin present would be small, and sufficient gas to burst the bottle would not be given off before the bottle had been corked for some little time. Gum acacia containing tannin should not be used in medicine, but since there appears to be no other explanation of the explosion, our correspondent should examine the

gum with which the almond mixture is made. Sweet spirit of nitre is so commonly prescribed as a diuretic and diaphoretic that a few notes about its incompatibilities may be useful. Its keeping properties are notoriously bad, and unless great precautions are observed in storing it decomposition takes place rapidly; to avoid loss of strength as much as possible it should be kept in a cool, dark place in small, stoppered, amber-coloured bottles. For reasons already stated, sweet spirit of nitre should not be prescribed with any drug containing tannin, but its unsatisfactory behaviour with several other drugs is due to the fact that it is extremely difficult, if not altogether impracticable, to prevent it from becoming acid. It should not be prescribed in a mixture with iodides, otherwise iodine will be liberated; if, however, the spirit is neutralised with bicarbonate of soda before being mixed with the iodide solution the reaction is retarded, but nevertheless it is advisable to avoid such combinations. Nor should sweet spirit of nitre be prescribed with antipyrin, a solution of which it turns green. When sweet nitre is added to a solution of sodium salicylate the mixture soon becomes red, even if the spirit is rendered neutral before adding it to the solution. It is a safe rule not to prescribe sweet spirit of nitre in combination with iodides, bromides, antipyrin, or sodium salicylate, or with drugs or preparations of drugs containing tannin.

THE DIFFICULTIES OF DISPENSING.

A VALUED German correspondent writes: "The question of what a dispenser should do in the presence of a prescription calling for an unusually large dose of some drug, to which you have recently referred,[1] is one well worthy of the attention of the medical and pharmaceutical professions. An opportunity may present itself at no distant date to place this somewhat delicate question on a firm basis by including some definite rules for the guidance of prescriber and dispenser in the next issue of the British Pharmacopœia, for, curiously enough, Great Britain figures among the small number of countries which have taken no steps to settle this matter." He adds interesting particulars of proceedings in different countries in face of the difficulty. From these it seems that in many European countries, and also in Japan, the whole subject is regulated by certain rules, incorporated in the national Pharmacopœia, and designed to obviate any doubt as to the course to be pursued in certain circumstances. This is effected by indicating to every heroic preparation or drug the amount regarded by the medical compilers of that work as the largest therapeutic dose to be administered in ordinary circumstances; in most instances not only is the "maximum dose," as it is called, stated for a single administration, but also the total amount which may be administered within a period of 24 hours. Should the prescriber wish to order a larger dose than the amount officially recognised, he must indicate that this is his intention by adding a point of exclamation (!) after the dose, in which case the responsibility rests entirely with him. In a considerable number of countries special provisions decide the course to be adopted by the dispenser in the event of receiving a prescription in which the maximum dose is overstepped. Thus in Belgium, if the higher dose is not underlined or followed by a point of exclamation, the dispenser is enjoined to communicate with the prescriber, and if this is not possible he is to reduce the dose to the amount given in the table of maximum doses and inform the physician accordingly. In the case of prescriptions for children the doses have to be diminished in proportion to the child's age. The Italian law requires that in prescribing heroic drugs the quantities should be written out in full in words, and should the dose appear dangerous or non-therapeutic the prescriber must indicate on the prescription that its administration is to take place at his own responsibility and must mention the use for which it is intended. The laws of several of the German States contain very explicit statements regarding the treatment of doubtful prescriptions. Generally if the prescriber oversteps the maximum dose, and cannot be communicated with in time, the pharmacist has to reduce the amount prescribed to within the limits of the maximum doses, and later inform the prescriber. If the dispenser have reason to believe that a mistake has been made in a prescription, when the prescriber can be reached he is to discuss the matter with the latter, or to inform him of his doubts by means of a private letter. If the prescriber insists upon the dispensing of his unusual prescription to the letter the pharmacist is to inform a Government officer of the facts. Illegible prescriptions may not be dispensed. It must not be forgotten that in Germany a very strict supervision by the State is usual in most relations of life. The French Codex of 1908 includes a table of therapeutic doses, but it is distinctly stated that the amounts given are merely of an informatory character and not intended to limit the prescriber's liberty or discretion. Should he, however, wish to overstep these amounts he should indicate that this is done intentionally by adding the words, "Je dis." The following amounts are taken by our correspondent from the tables of maximum doses of some of the more recent pharmacopœias, and are interesting inasmuch as they reflect the conception of the safe therapeutic dose held by the medical profession of the countries given. "The first amount gives the single, the second the total, dose within 24 hours (in grains).

—	France (1908).	Hungary (1909).	Japan (1907).	Switzerland (1907).
Caffein	gr. 8 -30	gr. 5 -15	gr. 8 -24	gr. 8 -24
Cocain hydrochl.	,, ¾- 2½	,, ½- 2½	,, ¾- 2½	,, ½- 1
Morphin. hydrochl.	,, ½- 1¼	,, ½- 1½	,, ½- 1½	,, ½- 1½
Opium	,, 3 - 9	,, 2½- 8	,, 2½- 8	,, 2½- 8
Tinct. opii	m.33 -100	m.25 - 85	m. 25-85	m. 25-85

In many cases the above doses do not only refer to the administration of the drug per os, but, for instance in Switzerland, to their application by hypodermic injection, in the form of suppositories and also in lavages, and maximum doses are also given for the percutaneous application of guaiacol, creosote, and methyl salicylate. Holland includes injections into the uro-genital apparatus as coming within their range of applicability, and Belgium their administration per rectum." It will be seen from the interesting information which our correspondent has brought together that the aim in every country is to multiply responsibility in deciding about so important a matter as a prescription calling for potent drugs.

[1] THE LANCET, Jan. 29th, 1910, p. 311.

DISINFECTION OF THE SKIN BY MEANS OF IODISED CHLOROFORM.

Le Monde Médical for January contains a useful account of the method of disinfecting the skin with a solution of iodine in chloroform, as first proposed by Dr. Chassevant in 1906. The use of tincture of iodine for the purpose of disinfecting the skin before surgical operations tends to become more and more general. In using an alcoholic solution of iodine, however, care must be taken not to use a tincture of greater strength than the B.P. tincture, on account of the liability to produce a necrosive action. The tincture should be freshly made and should not contain free hydriodic acid, which might cause considerable pain. Even when recently

prepared the tincture always causes a more or less extensive necrosis of the epidermis, followed by desquamation. A solution of iodine in chloroform, on the other hand, possesses the antiseptic and revulsive properties of iodine to the full, without causing pain, sloughing, or sclerosis of the epidermis. When used for disinfecting the skin before making hypodermic or intravenous injections it possesses the additional advantage of rendering the puncture painless, the chloroform acting as a local anæsthetic. Dr. Chassevant employs a 1 in 15 solution of iodine in chloroform. The solution is absolutely stable, remaining good indefinitely, provided a rubber cap is kept over the stopper to prevent evaporation. In disinfecting the skin with this iodised chloroform the area is first rubbed with a plug of cotton-wool, because it is indispensable that the skin be perfectly dry. The iodised chloroform is then applied with a feather or a camel's-hair brush, after which the excess of iodine is removed with a mop of cotton-wool dipped in chloroform. When the iodine is applied in this way the skin remains smooth and does not desquamate.

THE SCIENTIFIC AND SURGICAL INSTRUMENTS SECTION OF THE APPROACHING JAPAN-BRITISH EXHIBITION.

AS chairman of the Scientific and Surgical Instruments Committee of the approaching Japan-British Exhibition at the White City, Sir Henry Morris has issued a circular letter appealing to all British makers of instruments that come within the scope of the committee's schedule "to give such coöperation and to make such a display of their productions as shall be worthy of so great an opportunity, in order that our nation may be adequately and honourably represented," since "the Japanese are entering upon the enterpise of this exhibition with the energy and thoroughness which are characteristic of their nation, and from their point of view success is assured." We have great pleasure in giving publicity to this appeal, and seeing what a standard of perfection has been reached by British instrument-makers we have no doubt that they will make such a display as will compare favourably with anything that their Eastern competitors can show. We may add that the committee which issues this appeal is a strong one and adequately representative of the various medical and allied sciences. All inquiries may be addressed to the secretary of the committee at Shepherd's Bush.

THE FUTURE OF VOLUNTARY HOSPITALS.

THE financial situation of the Newcastle Infirmary as revealed by the house committee in the annual report, and many of the remarks and criticisms made at the recent annual meeting of the governors, will cause reflections as to what may be the outcome of the present-day manner of raising money for public institutions. It was instanced that there were 200 firms in the district which did not contribute to the infirmary, but that in each of these cases their workmen were contributors; there were 61 colliery firms in like case whose workmen contributed largely and constantly; while, again, there were a few firms which supplemented by an equal amount the sum contributed by their men. A question was asked by a representative of the Northumberland Miners' Association whether any idea could be given of the percentage of cases from non-contributing areas, and in answer it was stated that the subscriptions committee was quite cognisant of the fact that cases came largely from non-contributing areas, and often cases from contributing areas were compelled to wait for weeks for admission in consequence. It is impossible to deny that, other things being equal, the patient from a subscribing area would appear to have a better claim to admission than the one from a non-contributing source, but if this principle be fully enforced its conclusion will be dangerous, and the primary object of the original endowers of the infirmary—"to help the sick and lame poor"—may be ignored in favour of a system which to the uninitiated would appear to be somewhat like that of a provident institution. The large increase in the number of patients attending the Newcastle Infirmary, coupled with the large sum raised by the working men of the district (£16,000 in the past year), must raise speculation as to the future of voluntary hospitals in the minds of the outsider, the ratepayer, and the medical practitioner.

URGENT DYSPNŒA IN CHILDREN DUE TO TUBERCULOUS MEDIASTINITIS.

IN *Guy's Hospital Gazette* for February Dr. H. C. C. Mann has reported two cases of paroxysmal dyspnœa in children due to a cause which does not appear to have been previously recognised—tuberculous mediastinitis. In the first case a boy, aged 8 years, was taken to the Evelina Hospital on July 8th, 1907. For two years he had suffered from bronchitis. At the end of May he began to waste and to be liable to attacks of nocturnal dyspnœa. At first they were slight and were accompanied by cough and a little expectoration; lately they had been accompanied by congestion of the face and stridulous breathing. On examination impaired entry of air into the upper lobe of the right lung with many moist sounds was found, and fibrosis of the lung with some local bronchiectasis was suspected. On the 25th the attacks had become more severe and were accompanied by pain in the chest. There were deficient movement of the upper part of the right chest, deficient entry of air, and slight stridor heard all over the right side. The first and second intercostal spaces near the sternum were dull on the right side, and to a less degree on the left. The upper part of the sternum was also dull. The neck was swollen and enlarged veins were seen in its lower part and over the clavicles. The episternal notch was obliterated and the thyroid gland seemed somewhat enlarged. Examination of the larynx showed nothing abnormal. When the head was flexed towards the sternum the stridor was much increased and the child complained of pain. Below the right angle of the jaw were one or two enlarged glands. There were no signs of retropharyngeal abscess. In consequence of the rapid increase in the severity of the symptoms, mediastinal growth, probably originating in the thymus, was diagnosed. Examination with the X rays showed diminished trans-radiancy of the upper chest. In the next fortnight the symptoms increased: the face was very œdematous, the superficial veins were tortuous and enlarged, the attacks of dyspnœa were very urgent, and the pain was severe. The breathing stopped twice, and the house surgeon was about to perform tracheotomy, but the child recovered. The temperature rose in the evening to 101° F. On August 24th the gait was noticed to be peculiar; the knee-jerks were brisk and there was ankle clonus on the right side. The attacks of dyspnœa became less urgent. On August 30th the child first complained of pain in the back and tenderness was found over the last cervical and first two dorsal vertebræ. At the end of September there was kyphosis involving the last cervical and upper three dorsal vertebræ. The child was kept on his back for four months, and then fitted with a poroplastic jacket and jury-mast. Stridor was heard on both sides of the chest as late as May, 1908. The jacket was worn until July, 1909. All signs of active disease disappeared. In the second case a boy, aged 3 years, was admitted into Guy's Hospital for attacks of urgent dyspnœa. He was sent from the Brook Fever Hospital, to which he was admitted in August with diphtheria. Soon afterwards he developed whooping-cough, and on

Sept. 23rd scarlet fever followed. He recovered, but in November he suffered from pain in the back, which was soon followed by paraplegia. On Nov. 22nd there was an attack of dyspnœa with stridor and costal recession lasting half an hour, but the voice was quite clear, and nothing could be seen in the throat. In the five days before admission to Guy's Hospital the respiration became more laboured and there were four attacks of urgent dyspnœa. The respiration during the intervals was of a "wheezy" type. On Nov. 28th he was seen recovering from an attack of dyspnœa, the third since his admission. The superficial cervical veins were engorged, the face was pale and œdematous, and the lips were cyanosed. The lower three intercostal spaces were sucked in during inspiration, and loud stridor was heard all over the chest. The upper part of the sternum was dull, and the percussion note was impaired over the upper two intercostal spaces near the sternum. The knee-jerks were absent, the lower limbs were paralysed, and sensation was lost below the umbilicus. During the next 18 hours further attacks of dyspnœa occurred, and after one the respiration stopped. Tracheotomy was performed and a catheter was passed down into the bronchus without effect. The necropsy showed miliary tubercles in the spleen and liver, and a few tuberculous ulcers in the small bowel. The trachea was flattened and pushed forwards by a large mediastinal abscess. The second, third, and fourth dorsal vertebræ were carious.

THE LATE MISS ISLA STEWART.

BY the death of the matron of St. Bartholomew's the hospital world has sustained a great loss. Trained at St. Thomas's Hospital, where she held the post of sister for five years, Miss Isla Stewart was appointed in 1885 matron of the small-pox camp at Darenth during an epidemic which left her in charge of a thousand patients. She subsequently spent a year at the Homerton Fever Hospital, and her fine administrative qualities obtained for her the post of matron and superintendent of nursing at St. Bartholomew's Hospital in 1887. At a banquet given in her honour and to celebrate the twenty-first anniversary of this appointment, Mr. Harrison Cripps, recalling his earlier days as a student at the hospital, gave some interesting reminiscences which showed forcibly the enormous change in the wards and the character of the nursing which Miss Stewart had effected. He was by no means the only one who testified to her influence on progressive measures, for she won the respect and gratitude of the medical and surgical staff by her quick comprehension of their requirements, and her ready assistance in carrying out any new methods of treatment. Her influence extended far beyond her own hospital walls, and as the result of a visit of French medical men to our hospitals she was asked by the Assistance Publique in Paris to receive a group of French nurses to be instructed in methods of English nursing at St. Bartholomew's. The Assistance Publique also presented her with a special medal of honour in recognition of her public work for the nursing profession. She was president of the Society for the State Registration of Nurses, a member of the nursing board of Queen Alexandra's Imperial Military Nursing Service, and principal matron of No. 1 (City of London) Hospital of the Territorial Force Nursing Service, besides holding many other honorary titles in connexion with nursing societies. She was buried at her native home of Moffat, in Dumfriesshire, and on the same day a memorial service took place in the Church of St. Bartholomew the Great, the Archdeacon of London officiating, assisted by the vicar and the chaplain of the hospital. Lord Sandhurst, treasurer of the hospital, attended, and a great many of the medical and surgical staff. Other hospital and nursing interests were represented in the persons of Sir Edmund Hay Currie, Sir Frederick Alliston, Sir George Wyatt Truscott, Miss Haldane, Miss Keer, and Miss Becher. The Prince of Wales, who is President of St. Bartholomew's Hospital, requested Lord Sandhurst to convey his sympathy to Miss Stewart's relatives and friends and the authorities of the hospital in the loss which they had sustained.

THE MINORITY REPORT BILL.

Sir Robert Price has drawn the first place in the ballot for the Minority Report Bill, and the Bill, the text of which has now been circulated, is set down for second reading on Friday, April 8th. The Bill, which represents in the main the views of the recent Minority Report on the Poor-law, is backed by Members representing all political parties in England and Scotland.

INSTRUCTION IN DENTAL SURGERY FOR MEDICAL STUDENTS.

A PAPER published last month in *Public Health* by Mr. R D. Pedley on Dental Disease and the Medical Profession raises one or two points worthy of consideration by those interested in medical education. Mr. Pedley, after emphasising the important relationship between teeth and general health, refers to the fact that instruction in diseases of the teeth does not form part of the recognised curriculum for medicine. To this he attributes in a large measure the scant attention given by the average medical practitioner to the teeth as the possible source of many of the troubles he is called upon to diagnose and treat. There is little doubt that a knowledge of dental surgery is essential to the real appreciation of many of the obscure abdominal and other conditions met with, and it would be well in some way to fill this gap in the education of the student. In most of the teaching hospitals courses of lectures on dentistry are given, but the attendance at this is optional, and we believe that few students attend. Mr. Pedley suggests that a good deal might be done in dental departments of the general hospitals by a development of the teaching of clinical dental surgery. He points out, too, that during the last 15 years not a single question in dental caries has been set at the examinations either of the Royal Colleges or of the University of London. It is quite possible that the fear of an occasional question on dental surgery would stimulate the medical student to make a further acquaintance with the relation of dental diseases to the general condition he is called upon to treat in the course of his work.

THE general secretary of the Sixteenth International Medical Congress, which was held at Budapest last September, notifies us that the members of that assembly will receive their copies of the general report during the course of the month of April. In accordance with the terms of the Congress regulations, every member will receive a copy of the general volume as well as of that of the section in which he was inscribed. Besides these publications, a copy of the work on "The Protection of Child-life in Hungary" will be presented to each member of the Congress by the Royal Hungarian Minister of the Interior.

IN recognition of valuable services Dr. Augustus William Paterson Murison, of the Deaconesses' Hospital, Cairo, has been permitted by His Majesty the King to accept and wear the Insignia of the Fourth Class of the Order of the Red Eagle, conferred upon him by His Majesty the German Emperor, King of Prussia; and Dr. Edwin Robert Wheeler, formerly medical adviser to the Kanagawa Prefecture, has been permitted to accept and wear the Order of the Sacred

Treasure of the Third Class conferred upon him by His Majesty the Emperor of Japan.

THE library and offices of the Royal Society of Medicine, which were closed on March 15th for the purpose of packing and removal to its temporary quarters at 15, Cavendish-square, will be reopened on Monday, April 4th. 20,000 volumes of the books most likely to be wanted have been selected, and the remainder will be stored during the building of the Society's new house, which it is hoped will be ready for occupation early next year.

Professor Robert Kutner, Director of the Empress Frederick's Institute for Medical Education, Berlin, has been appointed an Honorary Commander of the Royal Victorian Order.

THE Governor of Mauritius reported only 1 case of plague during the week ending March 18th.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 24th, 1832.

ADDRESS

TO THE

MEDICAL PROFESSION AND TO THE PUBLIC GENERALLY.

(At the request of the Association, conveyed through the honorary secretaries, Mr. KING and Dr. MORRIS, the following document is introduced into our pages.—ED. L.)

THE present alarm respecting the disease which is now said to exist in London and its vicinity under the name of cholera, is maintained by some to be unfounded or exaggerated; while by others it is asserted that this alarm is neither without cause, nor disproportionate to the danger. Whence such diversity of opinion may have originated, has not been ascertained, nor has it been discovered whether there is any reasonable cause for the prevalence of opinions so opposed.

This unsettled state of the public mind has been productive of consequences the most pernicious. Our national relations have been injured; our internal prosperity has been shaken. The medical profession have been aspersed by one party, as encouraging panic without cause; and by another, as concealing from the public eye the real nature and the full extent of the disease.

To clear the character of the medical faculty of these aspersions by inquiring into the actual causes of this general alarm, and to reconcile these conflicting opinions, a medical association has been formed, to investigate the nature, modes of propagation, extent and treatment of that disease, and lay candidly before the public the results of its inquiries. As this Association belongs to no exclusive party, it advocates no exclusive views. The practitioners of whom it is composed espouse no theory; they support no faction: their bond of union is the public good: their common object is the cause of truth. Their interests are promoted neither by encouraging excitement, nor by resisting just alarm. If the disease known under the name of cholera exist in London, their object is to ascertain its extent, to elucidate its causes, to explain its management, and to restore the tranquility of the public, by an honest statement of the truth.

An Association formed with motives so pure, and an object so important, can have no enemies but those of science and of mankind. They, therefore, look to the public for countenance, and to the profession for assistance. They more especially solicit the co-operation of the medical officers of parishes and guardians of the poor. As they intend no opposition, they anticipate no resistance. In the truest spirit of philanthropy have they been organised, and with the most rigid respect to truth and candour will all their labours be conducted. They feel that the principles which they follow can lead them only to truth, and they are persuaded that the plan upon which these principles shall proceed, can scarcely fail to ensure ultimate success.

The proceedings of the Association shall at all times be open to inspection; the register* for the admission of members is now prepared for signatures; and while they express the most friendly feeling towards such as may decline to join them, the Association earnestly solicit and confidently hope for the speedy co-operation of all who are zealously attached to the interests of medical science, and wish sincerely to promote the welfare of the human species.

LEONARD STEWART, M.D.,
Chairman.

* At the house of Dr. Morris, 17, Southampton Street, Strand.

THE ANTI-TUBERCULOSIS CAMPAIGN IN LONDON.[1]

BY D. J. WILLIAMSON, M.D. EDIN.,

MEDICAL OFFICER OF THE PADDINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION; FORMERLY RESIDENT PHYSICIAN, ROYAL VICTORIA HOSPITAL FOR CONSUMPTION, AND ASSISTANT MEDICAL OFFICER, VICTORIA DISPENSARY FOR CONSUMPTION, EDINBURGH.

THERE has, I think, been a gradual change noticeable of late years in the mental attitude of the public generally towards the anti-tuberculosis campaign.

Formerly the ravages of the disease were regarded with a certain degree of fatalism, for while the public applauded and sympathised with the efforts of the medical faculty to cope with the problem, it never realised the possibility of stamping out the disease entirely. Money was generally forthcoming for the erection of sanatoriums or the maintenance of hospital out-patient departments, but it was felt, and to a certain extent rightly, that the patients treated at these institutions constituted merely a drop in the ocean, and that tuberculosis would continue to take its annual toll of the race until such time as a specific remedy should be discovered. No specific remedy, however, has been discovered, except fresh air and sunlight, and yet we find that the mortality from this disease has been in this country reduced by 50 per cent. during the last 40 odd years.

Moreover, our experience in the control of other infectious diseases has shown us that there is a surer method of exterminating a disease than by finding a specific remedy for it, and that is by prevention. In fact, it is now known to be due to our unconscious efforts at prevention, seen in our more cleanly habits, our improved hygienic conditions, our care of the nation's children, and our factory and workshop legislation, that we chiefly owe the reduction of the mortality from tuberculosis which has already taken place. Statisticians tell us that at the present rate of fall in the death-rate tuberculosis will be practically extinct in a generation, and will become merely historical in 50 years. We are within sight of the end; the disease is, so to speak, on its last legs, and the public are seeking to coöperate with the medical profession in this last great fight which will rid the nation for ever of a disease which causes so much suffering, misery, and poverty. On all sides one finds people anxiously making inquiries as to the best plan of attack to pursue in their district. Many plans are and will be proposed, many of them too hastily conceived and too much on theoretical grounds; hence many of them will be doomed to failure. I have been asked to describe to you to-day a plan of attack suitable for your district, a plan which was conceived 23 years ago, has gradually evolved and developed during all these years, and has emerged successfully at the end. It is a plan of attack which has been copied, in some cases consciously, in other cases unconsciously, in some instances exactly, in others in a more or less modified form, in most of the great countries of the civilised world—in Germany, France, Belgium, Holland, Austria, the United States, and Canada, and more recently still in London.

Englishmen are noted for their habit of allowing foreign countries to experiment with, and develop, any new scheme before adopting it themselves. Here, then, is a scheme with nothing novel or uncertain about it, which was in reality British in origin, but which has been developed to an enormous extent in three such countries as Germany, France, and the United States, and which is now, on the eve of the last great fight against tuberculosis, the most tried and trusty weapon which London can possess with which to rid itself of the disease in the course of the next generation.

THE PROBLEM OF ERADICATION.

In the attempt to finally eradicate tuberculosis from the community we have two main principles on which to work—i.e.: (1) the prevention of infection of those not yet affected; and (2) the treatment of those already infected. The prevention of infection of those not yet affected is, of course, the most obvious way of completely eradicating the disease. If preventive measures could be

[1] A paper read at a meeting of the Battersea Voluntary Health Society, Jan. 26th, 1910.

successfully and universally carried out it follows that tuberculosis would cease to exist when the last person at present affected died. This dream has been more completely realised of late years than ever before by the education of the people, the inspection and disinfection of their houses, and the isolation of advanced cases. But our preventive measures are sadly inadequate, and it is very important that our energies should be mainly directed along these lines. The treatment of those already infected depends on whether the treatment of cases in any way tends to reduce the mortality from this disease. This is the main question we should ask ourselves. If the answer be in the negative then from a national hygienic point of view the money spent on treatment is a national waste. To answer the question it is first of all necessary to differentiate the different classes and modes of treatment in use. Firstly, we have the treatment of early cases with a view to cure. Secondly, we have the treatment of all but the early cases—that is to say, of the great mass of consumptives—not with a view to cure, the time for that having passed, but with a view to the alleviation of their symptoms and mainly with a view to the prolongation of their lives.

The result of treatment.—Undoubtedly the treatment of early cases if successful—that is to say, if leading to nothing short of a permanent cure—does tend to reduce the mortality from tuberculosis to a certain extent. But, on the other hand, it cannot be said that the prolongation of the lives of the great mass of consumptives has this desired effect at all. In fact, it probably has the opposite effect—that of increasing the mortality by lengthening the period during which each consumptive is a danger to his neighbours. Thus it is that one occasionally hears it remarked that instead of spending vast sums on the treatment of consumption it would be better if all consumptives could be placed in a lethal chamber as soon as the disease was diagnosed. From a strictly economic and hygienic point of view this might be true.

The proportion of curable to incurable cases.—The proportion of strictly early, and therefore potentially curable, cases, to those who have got beyond this stage, is at a guess 1 in 4; or, in other words, of every five consumptives four have probably got beyond the stage when treatment can be expected to result in absolute permanent cure, leaving 20 per cent. curable. I use the word "consumptives" here to mean such people who may be complaining of one or other of the symptoms of the disease to a slight extent, and who, on consulting a doctor of average ability and experience, would be diagnosed by the aid of physical examination alone to be tuberculous. The total number of such "definite" cases is probably at least five times the annual mortality from this disease. This is the mean of figures quoted by different authorities, which vary from three to 10 times the mortality. Thus in London, where the mortality from consumption in 1908 was 6246, or roughly 6000, there would be 30,000 consumptives living who had reached this stage of "definiteness," of whom, according to the preceding estimate, 20 per cent., or some 6000, are curable, and 24,000 incurable.

The search for early cases.—It must, however, be realised that by the time the tubercle bacillus has caused sufficient tissue reaction and changes in the lungs for its presence to be diagnosed clinically, with anything like certainty, by even a specialist, the disease must be considered as already somewhat advanced. It is therefore probable that the total number of persons in whose lungs the tubercle bacillus has found a lodgment and is developing is quite 10 if not 20 times that of the annual mortality. And this is more than borne out by the result of post-mortem examinations. Thus Hughes Bennett found healed tubercle in the lungs of from one-third to one-half of all the individuals who die after the age of 40 (Newsholme). "The observations of Rogée and Boudet, made at the Salpêtrière Hospital in Paris, amongst individuals generally above the age of 70, showed the proportion in such persons to be respectively one-half and four-fifths" (Newsholme).

Let us, however, take the lower estimate of ten times the annual mortality as representing the total number of persons in whose lungs there are foci of potentially active tuberculosis, as this lower figure will serve our purpose sufficiently. Thus in London, where the mortality is 6000, we have at least 60,000 such persons, of whom we have just estimated that 24,000 are incurable. This leaves 36,000 people who are curable if treated at once. Some of these, no doubt, as shown by post-mortem observations, would if left alone become spontaneously cured without ever knowing they had had the disease. But others of them will go on to the more advanced stages and many of them will die from consumption. Again, there is no saying whether some of those who become cured or who die from other causes, and who never know they have the disease—whether some of these may not at one or other period of their career be infectious to others. I believe that such is often the case. It is therefore essential if, as I repeat, our aim is to stamp out tuberculosis entirely to discover these early cases and put them under suitable treatment before it is too late.

The examination of "contacts."—Of these 36,000 curable cases we have seen that only 6000 are sufficiently advanced for the disease to show itself by characteristic symptoms and physical signs. Are the remaining 30,000 to be left alone until such time as the fatal symptoms begin to show themselves? If the anti-tuberculosis campaign means the organised effort and endeavour to entirely eradicate the disease, then it is imperative that we should search out these 30,000 persons and put them under treatment or surveillance. But it may well be asked, "How are they to be found if they complain of no symptoms and if their physical signs are so indefinite?"

Experience teaches us that with only a few exceptions tuberculosis is a domestic disease, and that in the great majority of cases infection takes place in the home. That means that a great majority of these 30,000 infected persons will be found amongst the relatives of the more definitely consumptive cases. Hence the great importance: (1) Of examining all the relatives of every patient known to have the disease; (2) of looking with suspicion on the most indefinite physical signs if they occur in a person related to a consumptive patient; and (3) of treating such person as a consumptive at once, without waiting for more definite physical signs to appear.

Contact cases among children.—The section of the community to which these remarks apply with particular force is that of the children, especially those of about school age, and it is in the examination of these persons for signs of tuberculosis that the greatest difficulty will be experienced.

It is acknowledged on all sides that, though phthisis as a fatal disease and as a well-marked clinical condition is rare at this age, the amount of latent pulmonary tuberculosis must be extremely high. This must be so from the remarkable increase in the death-rate from phthisis which occurs during adolescence and, as a matter of fact, begins to show itself towards the latter end of the school age, especially among girls. For, as I have remarked before, the sources of infection do not become indefinitely multiplied after leaving school, as would have to be the case if we denied the existence of this large amount of latent disease in childhood.

The real difficulty in the detection of the disease during school age lies in the fact that there is no definite knowledge, or rather consensus of opinion, as to what constitute the diagnostic signs of latent disease. The difficulty is added to by the fact that certain physical signs might equally well be those of latent pulmonary tuberculosis or of certain simple physiological conditions, and we are asked to give every child showing such signs the "benefit of the doubt" and to await the development of signs which cannot be mistaken for anything else before pronouncing the case to be one of pulmonary tuberculosis. At present every observer is more or less of a rule unto himself, and until the great importance of discovering these cases in the incipient and latent stages is more fully realised we are unlikely to arrive at a more definite decision as to what constitute the signs of the disease in this latent condition. In my opinion, if diagnosis is to be followed by rational treatment one is more likely to be giving the child the benefit of the doubt by accepting such ambiguous signs as diagnostic of tuberculous disease than by rejecting them, even if in a certain proportion of cases we are mistaken in doing so.

The dispensary ideal with regard to "contacts."—We have seen that there are probably some 30,000 "definite" consumptives living in London to-day. Suppose each of them to belong to a family consisting of, on an average, five persons. Then I say what we want in London is not so much an organisation for the treatment of these 30,000 "definite" cases (of whom 24,000 are, as we have seen, probably incurable), but a very complete organisation, at present not in

existence (except at Paddington), for the examination of the 150,000 or so apparently healthy people who are related to those 30,000 consumptives, in order to find the very early, and possibly only suspected "contact" cases, and, further, to carry out such measures as will safeguard such early cases when found from any further development of the disease.

PREVENTIVE TREATMENT.

The idea of "treatment" is unfortunately associated with drugs in the public mind, but the phrase "to put under treatment" should, I think, convey three separate ideas.

1. First of all, there is the old form of treatment—namely, by the administration of various drugs. This is nowadays practically confined to the treatment of the more advanced cases—that is to say, those who have got beyond the curable stage—and is the form of treatment universally carried on by the *out-patient departments* of our great hospitals (both "chest" hospitals and general hospitals). It is useful for the amelioration of such symptoms as cough and hæmoptysis, but is valueless in the attempt to eradicate tuberculosis from the community.

2. Secondly, there is the more modern treatment carried out at all our up-to-date *sanatoriums*. This consists mainly in supplying the patient with an abundance of fresh air, good food, and carefully graduated employment. The class of patient suitable for this treatment is the "definite" but still curable case. In proportion as this treatment is successful—that is to say, its main object is attained, namely, the permanent cure of such patients—it becomes valuable in its power to assist the final eradication of the disease.

3. Thirdly, there is that form of treatment which should be applied to those indefinite but suspected cases chiefly found in the families of those known to be suffering from the disease. This consists in building up the suspected person's strength, increasing his individual resistance, and if possible safeguarding him from the risk of further infection. This form of treatment can only be successfully carried out by the *tuberculosis dispensaries*, for it needs the personal supervision of the home conditions by the doctor attending the case.

The large number of such suspected cases and the indefinite character of the diagnosis render it impossible to remove them from their homes or to send them to sanatoriums. It is therefore necessary to carry out this form of treatment in the homes themselves. This must be distinguished from what is commonly called "home treatment," which generally means the mere supplying of medicines to patients living at home and attending the out-patient department of a hospital. The dispensary treatment, which may be called "preventive treatment," has no necessary relationship to the giving of medicine.

The wide scope of preventive treatment.—Such treatment as that indicated in the last paragraph sounds simple, but it is in reality far more difficult than either of the other two. It needs not only the skill and science of physician, but the close coöperation of the philanthropist, the social worker, and all charitable societies and institutions engaged in the improvement of the social welfare of London's poor. The improvement of the dwellings, the teaching of domestic economy and cookery, the inculcation of thrifty, sober, and cleanly habits, the care, nourishment, and education of children, and the finding of suitable employments for the breadwinners, are some of the problems concerned. It may be said that these are merely the problems of prevention. That is so, with this difference, that the treatment of these suspected cases consists in our application of the general methods of prevention, not at random, but to certain definite houses, and to certain definite people in those houses whom we suspect of being already infected, and with this further advantage that the control of these preventive measures is centred in the medical man in attendance and constitutes his "treatment," the patient being kept under his surveillance permanently and examined by him from time to time to see that the disease is making no headway. Thus, as Dr. Arthur Newsholme says, when speaking of the advantages of notification, the patient is converted from a focus of infection into a focus of prevention.

Result of preventive treatment.—What of the result of this form of treatment? We have seen that the result of drug treatment at the out-patient departments, however successful, is valueless from our point of view—i.e., the eradication of tuberculosis; that the result of sanatorium treatment of the definite but curable cases, however successful, is of *relatively* little value to the community; but the result of this searching out of suspected cases by the examination of "contacts" and the application to them of this preventive treatment, if thoroughly carried out and successful, would practically be the stamping out of the disease.

THE TUBERCULOSIS DISPENSARY: WHAT IT IS.

It would be well here to discuss rather more fully the functions of a tuberculosis dispensary such as the Victoria Dispensary, Edinburgh, or the Paddington Dispensary for the Prevention of Consumption, London. It is surprising how little these functions are understood by the general public or even by the members of the medical profession. Thus, many people think of a dispensary merely as a modified out-patient department of a hospital, but without the hospital beds; others think of it as a means of depriving the struggling general practitioner of his bread and butter; and, finally, a common error is to think of the dispensary as an isolated institution, a means in itself of dealing with the tuberculosis problem, offering a rival method of treatment to that carried out at sanatoriums. All these ideas are entirely wrong, and if those holding them would take the trouble to visit a dispensary or to make inquiries as to what are its functions and methods they would soon be undeceived.

Firstly, then, the dispensary does not pretend to be a complete means in itself of dealing with all aspects of the problem, nor does it offer any rival method of treatment to that carried out at a sanatorium. What is claimed for the dispensary is that it forms an essential link in, and in fact the fundamental basis of, any complete anti-tuberculosis organisation for a given district. Secondly, it has very little in common with an out-patient department. Thirdly, in no way does it prejudice the interests of the general practitioners or of provident and other dispensaries.

The chief functions of the Tuberculosis Dispensary are the following:—

A. The examination of patients.—It draws its patients from the following sources: 1. Poor people suffering from coughs, &c., unable to afford treatment in the usual way, desirous of examination, advice, and treatment—that is to say, the ordinary class of hospital out-patients. 2. Cases suspected of, or suffering from, consumption sent up by the general hospitals, the private practitioners, Church and social workers, sanitary inspectors, &c., for advice or treatment or both. 3. Contact cases—i.e., those related to, or exposed to, infection from existing tuberculous patients.

B. The sorting out of cases for appropriate treatment.—After examination, and if necessary after a prolonged period of observation, the patients thus received are sorted out as follows:—

1. The non-tuberculous are at once sent on to the general hospitals, or if they can afford treatment to their private doctor.

2. Those already under treatment elsewhere are not dealt with without the sanction of their present medical attendants.

3. The surgical cases of tuberculosis are (if needing treatment) sent to a suitable hospital.

4. The dying or otherwise highly infectious cases are, if living in such surroundings as to be a danger to others, removed, if possible, to a home for the dying, or infirmary.

5. The advanced and bedridden cases, if living in such surroundings as not to be a danger to others, are treated at home.

6. The early phthisical cases are carefully considered with a view to sanatorium treatment and if judged suitable are sent to one or other of these institutions.

7. Those cases in whom the diagnosis of tuberculosis is very doubtful, or those who are considered to be predisposed to the disease, are looked after as described in an earlier part of this paper under the heading of "Preventive Treatment," but should any intercurrent illness occur such as pneumonia or measles, or any gastro-intestinal disturbance, these cases are treated by their family doctor.

8. Delicate children, either phthisical or predisposed, may, if considered advisable, be sent away to the country, either to convalescent homes or sanatoria.

9. Such children may also be put in special open-air schools, where they may continue their education without injury to their health, and at the same time be trained to become healthy and hygienic citizens.

10. The remaining cases—i.e., the bulk of the phthisical patients, too advanced or otherwise unsuitable for sanatorium treatment, and not sufficiently advanced to be sent to infirmaries or homes for the dying—are treated at the dispensary as at an out-patient department, with this difference, that the practitioner in attendance himself visits the homes and endeavours to discover and eradicate the source of infection and those unfavourable conditions which assist in the development of the disease.

C. The supervision of the home conditions.—Both the medical man in attendance and the nurse visit the homes of the patients, the former chiefly with a view to making certain inquiries of use for statistical purposes in relation to overcrowding, poverty, &c., and in order to give advice on the spot as to the best arrangement of rooms, distribution of sleeping accommodation and methods of preventing the spread of the disease, and the latter with a view to the detection of possible sources of infection, and the examination of the other members of the family.

Any insanitary conditions are notified to the public health authorities. The following schedule of inquiries is filled up by the nurse and countersigned by the medical attendant, and it will be seen that not only will the accumulation of such statistics be of great value, but that the treatment of patients based on this knowledge of the home surroundings, pecuniary conditions, hereditary tendencies, and sources of infection, must be more rational and beneficial than the treatment as given at out-patient departments and general dispensaries.

No. in Ledger..... *Date of Report*.....
Name Age
Address Married or single?
Occupation Has patient changed occupation?
Able to work full time? Or part time?
If unable, confined to bed? How long ill?
Situation of house (area, ground floor, 1st, &c.)?
Character of neighbourhood?
Number and ages of inmates?
Number and description of rooms?
General aspect of house (clean, damp, dusty, smelly)?
Number of windows? Can they open?
Are they kept open (*a*) by day? (*b*) by night?
Have they always been kept open?
Does patient sleep alone (*a*) in bed? (*b*) in room?
How is washing of clothes done?
How long in present house?
If has moved within two years, previous addresses?
Have there been illnesses or deaths in house—
(*a*) In own time? (*b*) In previous occupancy?
Exposed to infection (*a*) at home? (*b*) at work? (*c*) among friends?
Present health of other members of household?
What precaution taken to disinfect?
T.B. in sputum? T.B. in dust room?
General dietary? Teetotal?
General condition (well-to-do, badly off)?
Proximate income of household?
Assisted by societies, Church, friends, rates?
Signed.....Reporter.
.....Medical Officer.

D. Coöperation with other agencies.—The dispensary forms the centre for the reception and examination of all classes of patients, and for the sorting out of these different classes of patients with a view to giving them appropriate treatment.

It may here be remarked that there is no "letter system" at the dispensary, so that it is open to all who care to come for examination and advice. It may also be mentioned that each dispensary should strictly confine itself to its own district, and in the event of dispensaries being opened in other districts should coöperate with them by the interchange of patients.

The dispensary should form the centre or nucleus of the whole anti-tuberculosis organisation in a district, the various elements composing such an organisation being linked together through the Dispensary.

The following diagram (Fig. 1) illustrates my meaning, and is an actual representation of the scheme of operations in force at the present moment in Edinburgh. The diagram illustrates the fact that the dispensary works in harmony with the medical officer of health for the district, and that both the dispensary and the medical officer of health have at their service a home for the dying, an infirmary, or other accommodation which can be used for the isolation of those advanced cases who are living under such surroundings as to be a danger to the community. Again, the dispensary has at its service a sanatorium (or, it may be, beds in more than one sanatorium) to which it can send curable cases. In Edinburgh there is also now a working farm colony to which patients who have passed through the sanatorium and are fit for hard work, but for whom an immediate return to town life would be unadvisable, can be sent. Finally, the dispensary, recognising the fact that consumption is a social disease, both dependant on and causing poverty and its associated evils, works in close coöperation with all manner of philanthropic and other bodies engaged in social work—e.g., the Church, the Charity Organisation Society, the

FIG. 1.

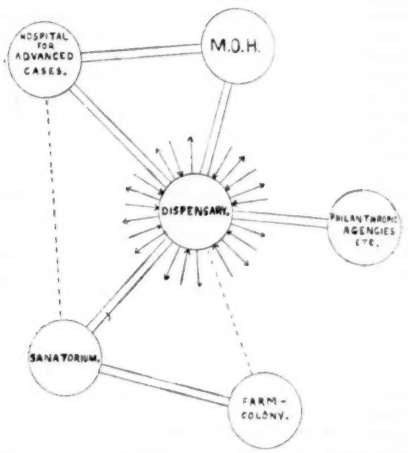


Diagram illustrating the relationship between the dispensary and the other factors in the anti-tuberculosis campaign.

Invalid Children's Aid Association, health committees, the Poor-law guardians, &c.

The next diagram (Fig. 2) shows a modification of the same scheme, more especially applicable to the dealing with tuberculous children. The parallel lines as before show the close coöperation which should take place between any two factors of the anti-tuberculosis organisation.

FIG. 2.

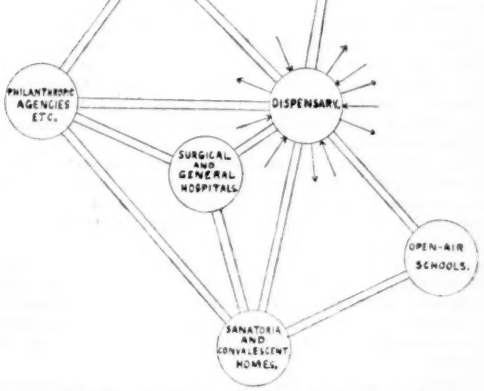


Diagram illustrating the organisation of the various factors in the anti-tuberculosis campaign dealing with tuberculosis among children.

A word or two of explanation is needed with reference to the coöperation (1) with the medical officer of health, (2) with the sanatorium, and (3) with the general practitioners.

1. *The medical officer of health.*—In Edinburgh, where compulsory notification has been in force since 1907, all cases attending the dispensary are, of course, notified to the medical officer of health, and it is noteworthy that during the first year of compulsory notification in that city more than half the cases notified were notified by the Victoria Dispensary.

In Paddington, where only voluntary notification is in force, the dispensary has a special arrangement with the medical officer of health whereby the dispensary notifies *all*

cases coming under its notice, even notifying as "suspected" those persons in whom the diagnosis is not yet certain. The medical officer of health in his turn does not send his sanitary inspectors to those cases notified by the dispensary, but leaves their supervision entirely in the hands of the medical officer and nurse attached to the dispensary, who, as we have seen, personally visit the homes of all cases. The notification of these cases is thus merely for the purposes of statistics. The dispensary collects (and has exceptional opportunities for collecting) various statistics and information regarding the social conditions of the district in which it is situated. This information is at the service of the medical officer of health or any others who may wish to use it. The medical officer of health undertakes the disinfection of premises after death or removal at the request of the dispensary. The sanitary inspectors, through the notification of Poor-law cases and of deaths, are able to send many suspected contact cases to the dispensary for examination. In this way the dispensary, though an independent voluntary institution, free of official trammels, becomes the most useful instrument in the hands of the medical officer of health for the prevention of disease and the supply of statistics and other information regarding the prevalence and distribution of the disease in his district.

2 *The sanatorium.*—As has already been said, the dispensary does not seek to compete with sanatoriums in the treatment of early cases as is often supposed. It has, however, been proved over and over again that, where sanatorium treatment is not available through lack of funds, or where for one or other reason sanatorium treatment is not to be recommended, with the supervision and improvement of the home conditions as a part of the treatment given at the dispensary, country air and sanatorium treatment are not a *sine quâ non* of improvement and recovery, even in children. There is, further, this advantage: that the education of the patient is more definitely related to his home conditions and that not only the patient but the whole family are at the same time educated. Also the patient thus treated does not suffer the discouragement and disappointment experienced by many sanatorium patients after discharge. Suitable cases are, however, sent to sanatoriums where such measures as constant discipline and graduated labour can be more readily carried out. With regard to the choice of sanatorium patients, the dispensary, by its knowledge of the home conditions, the family history, the prospect of future employment, &c., has exceptional opportunities for selecting only those in whom the benefits derived are likely to be permanent.

Again, with regard to the "after-care" of patients on discharge from sanatoriums, this difficulty is completely met by the dispensary, which takes charge of such patients at once, keeps them under supervision and treatment if necessary, teaches them how to apply the lessons they have learnt to their homes, and, if possible, endeavours to find them suitable employment.

Thus we see that the sanatorium benefits in every way by coöperation with the dispensary, having more selected patients sent to it, and being assured that the beneficial results will not be thrown away by a return of those patients to unsatisfactory home conditions.

3. *The general practitioners.*—It has already been stated that all cases at present under treatment by private practitioners are at once referred back to those practitioners for their sanction to the patients' attendance at the dispensary. The following is the form of letter sent out for this purpose:—

PADDINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.

20, Talbot-road, London, W.....19.....

DEAR SIR,

A patient.....

.....presented.....self to-day with evidence of.....

.....

Ascertaining that ..... he had been under your care, I should be glad to know if you have any objection to h..... attending at this Institution.

Yours faithfully,

_____

Medical Officer.

It may here be said that the same rule is strictly observed at Paddington with regard to patients attending various hospitals, but that St. Mary's Hospital, the only large general hospital in the district, is now sending almost all its phthisical patients, with a card from the lady almoner, to the dispensary. The reason for this is that it is realised at this hospital that the conscientious treatment of consumption implies a supervision of the patients' homes, and that this cannot be done by the ordinary out-patient department.

Returning to the general practitioner, it may be said that the class of patients attended by the dispensary cannot afford more than a very occasional sixpence for a bottle of medicine, and that they frequently allow these sixpences to accumulate, and in the end never pay them. So that these patients are no pecuniary loss to the general practitioner. Further, every general practitioner knows that the giving of an occasional bottle of medicine (which itself must contain only the cheapest ingredients) does no good at all, and that he cannot afford the time, and the patient cannot afford to pay him for the time, expended in visiting and attempting to improve the homes.

At the two centres in this country, Edinburgh and Paddington, where such dispensaries are in operation, no complaint has been heard from the general practitioners, but, on the contrary, in both centres many patients are actually sent to the dispensaries by their medical attendants. In some cases patients are actually sent for treatment, in other cases in order that the diagnosis may be corroborated or that the sputum may be examined. It must be realised that the general practitioners of the neighbourhood have thus in their possession a means of obtaining free consultations and the free bacteriological examination of sputum.

Dispensary programme.—The programme of the Victoria Dispensary, Edinburgh, of which the Paddington Dispensary is, as far as possible, an exact reproduction, is as follows:—

1. The reception and examination of patients at the dispensary, the keeping of a record of every case, with an account of the patient's illness, history, surroundings, and present condition, the record being added to on each subsequent visit.

2. The bacteriological examination of expectoration and other discharges.

3. The instruction of patients how to treat themselves, and how to prevent or minimise the risk of infection to others.

4. The dispensing of necessary medicines, sputum bottles, disinfectants, and, where the patient's condition seems to warrant it, foodstuffs and the like.

5. The visitation of patients at their own homes by (1) a qualified medical man; and (2) a specially trained nurse, for the double purpose (*a*) of treatment and (*b*) of investigation into the state of the dwelling and general conditions of life and the risk of infection to others.

6. The selection of more likely patients for hospital treatment, either of early cases for sanatoriums or of late cases for incurable homes, and the supervision, when necessary, of patients after discharge from hospital.

7. The guidance generally of tuberculous patients and their friends and for inquiries from all interested persons on every question concerning tuberculosis.

One slight difference exists in the working of the dispensaries in Edinburgh and Paddington: when the dispensary opened in Paddington the committee passed a resolution that no material assistance should be given to patients except through the local branch of the Charity Organisation Society. This was done in order to avoid the overlapping of charitable relief.

A SHORT SUMMARY OF THE GROWTH OF THE DISPENSARY MOVEMENT.

The dispensary movement, which began in Edinburgh 23 years ago, has now spread over the greater part of Western Europe and North America. The dispensaries started in the different countries, especially the European countries, vary considerably in their methods and functions to suit local conditions, and, of course, are not necessarily imitations of the Victoria Dispensary, Edinburgh. Their main functions, however, are identical in every case, i.e., (1) the examination of "contacts" in the search for early cases, and (2) the improvement of the home conditions. The following is a very short summary of this wide movement and says nothing of the dispensaries in Holland, Belgium, and Austria, which are all of recent growth and are mainly on the lines of those in France and Germany.

1882 (1).—*The announcement of Koch's discovery of the tubercle bacillus*, and therefore the definite classification of tuberculosis as a preventable disease.

1882 (2).—Compulsory insurance against sickness inaugurated in Germany.

1887.—*The Victoria Dispensary founded in Edinburgh by Dr. R. W. Philip.* The dispensary thus started in a humble way formed the nucleus of the anti-tuberculosis organisation in that city, which now includes (1) the dispensary; (2) a sanatorium of 100 beds in close relationship to the dispensary; (3) 60 beds for advanced cases set apart in the City Fever Hospital; (4) a working colony for cured cases; and (5) compulsory notification of the disease.

1901.—*The first dispensary opened in France at Lille by Professor Calmette.* In 1905 there were already more than 50 dispensaries in France. The original ones gave no medical treatment but considerable material assistance. Many of the more modern ones have found it necessary to give treatment.

1904 (1).—*The first dispensary opened in Germany at Berlin.* This rapidly grew and in a short time other dispensaries were opened, so that in 1907 there were 5 dispensaries in Berlin with a staff of 7 or 8 doctors and 14 or 15 nurses, and in 1908 there were 175 of these institutions in various towns, besides 534 dispensaries of the Society of Women in Baden, making a grand total, 4 years after the first was opened, of 709 tuberculosis dispensaries in the German Empire.

One word needs to be said here with regard to the German dispensaries. The compulsory insurance system started in 1882 had led to the rapid growth of an enormous number of sanatoriums and other institutions, and had also resulted in facilitating the treatment of patients at these institutions, all worry and anxiety over pecuniary matters being thus removed from the patients' minds. But one thing was necessary still, and that was to find patients in a sufficiently early stage, and hence the development of the dispensary scheme, which was the only logical outcome of the situation and is the only logical outcome of a somewhat similar situation in London to-day.

Owing to the large number of institutions for giving treatment already in the field the German dispensaries found it unnecessary to give treatment.

1904 (2).—*The first dispensary opened in America at New York.* The growth of the dispensary system in the States has been no less rapid, though I do not know the total number now in existence. In 1908 New York had 10 dispensaries, and various other towns had them as well. Though founded independently, their programmes are very similar to those of the Edinburgh Dispensary.

Boston has a dispensary which is a direct copy of the Edinburgh model. At the time of the Washington Congress in 1908 Dr. Philip was presented with a map of *Pennsylvania* showing 67 dispensaries marked on it, all on the lines of his dispensary in Edinburgh, and all founded within three years of the first.

1908.—*The first dispensary opened in Canada at Ottawa.* This is on the Edinburgh model.

1909 (1).—*The first dispensary opened in London at Paddington*, modelled exactly on the Edinburgh pattern.

1909 (2).—Last year also the King, by pressing an electric button in this country, opened *the second dispensary in Canada—i.e., at Montreal.* This also is on the Edinburgh lines.

THE FUTURE DEVELOPMENT OF THE DISPENSARY MOVEMENT.

There is no doubt that a similar growth of the dispensary movement will soon take place in this country. Our conservative adherence to the out-patient department system and certain difficulties connected with the funds of the hospitals are alone hindering this development. It is becoming gradually realised, however, that if the disease is to be finally eradicated it must be attacked where it lurks and breeds—i.e., in the actual homes of the poor, and that this cannot be done by proxy through sundry health visitors and others, but only by the direct and personal supervision of the homes by medical men and trained nurses.

The question is often asked, "Should such dispensaries, if started, be municipal or voluntary?" There are arguments in favour of and against their being municipal. If they were municipal the funds would be guaranteed and there would be no more difficulty in starting dispensaries in the poorer boroughs than in the richer boroughs. But, on the other hand, if the dispensaries first started prove their value there is no doubt that private funds will be forthcoming to start them in the poorer districts. And there is always this great advantage in their remaining voluntary—i.e., that they will be free of red tape and will be able to develop along any new lines which may be thought advisable. Of New York's ten dispensaries only one is directly under municipal control, the others being voluntary.

The chief object to be attained is that all the dispensaries should be on the same lines as each other, should confine themselves strictly to their own districts, should be free of the letter system, and should cordially coöperate with each other.

When London gets her network of dispensaries, as Berlin, New York, Chicago, and many other great cities have recently got them, the day when tuberculosis ceases to be anything but a name will have been brought appreciably nearer, and it is but a sign of the times that you have asked me here this afternoon to explain this scheme to you. I can only say that it is a great pleasure and privilege to me to have had the opportunity of doing so.

Note.—The part of this paper dealing more particularly with the functions of the dispensary has been rewritten so as to include the answers to various questions asked at the close of the lecture.

THE BREWING OF BEER CONTAINING A MINIMUM OF ALCOHOL.

IT has been said with a substratum of truth that one of the chief causes of intemperance is the extraordinary nastiness of many temperance drinks. The attitude of the total abstainer in regard to the drinks which he is bound to avoid must be regarded, in short, as stoical, for although amongst the numerous beverages offered to him few are absolutely unwholesome most of them are unpalatable. Time after time have various attempts been made to remove this stigma from temperance drinks, and in one or two instances some success has been achieved, but there is still room for a satisfactory non-alcoholic beverage. There can be little doubt that the movement in favour of consuming less alcohol is a strong one, and its adherents grow in force and number every day, so that the demand for a palatable wholesome beverage which is free, or very largely free, from intoxicant principles has become strong. In fact, a national drink which should enjoy the old popularity of beer while satisfying the susceptibilities of the opponent to alcohol is really wanted. The want is a healthy one, and therefore it should receive the serious consideration of all sanitary reformers.

The attention of the Analytical Department of THE LANCET has been directed for a good many years to this subject and consultation of our analytical columns shows that numerous temperance drinks have been submitted to analysis and reported upon by us accordingly. It is interesting to note that by far the greater number of these beverages has been examined during recent years—say, from the year 1900 to the present time. Amongst the kinds submitted have been mineral waters—soda-water, lemonade, ginger ale, ginger beer (fermented), thin malt extracts, aerated mixtures containing various flavouring materials, essences, and syrup, kola champagne, weak infusions of malt and hops (aerated), and sterilised grape juice. The latter is just now a very popular drink, and it forms a palatable, wholesome, and agreeably acid beverage when mixed with aerated water. In many cases our laboratory commissioners had to report the presence of preservatives, and there is little doubt that one of the serious obstacles to the making of a temperance drink is the fact that so often it will not keep, whereas in the case of alcoholic drinks the alcohol, of course, is the chief preservative.

Quite recently our attention has been drawn to a new beverage made practically in the same way as beer—that is to say, it contains the soluble portions of malt and the bitter principles of the hop—and yet it is without an appreciable amount of alcohol. Not the least interesting fact about this temperance beer is that the public will owe its production on a practical scale largely to the interest which is taken in it by a firm of well-known brewers. Our commissioners have had a full opportunity of seeing the plant which has been erected for the purpose of brewing this "nonal," as it is called. Without going into the minute technical details of the process, it may be said broadly that "nonal" is brewed

from malt and hops exclusively, but as the supply of malt sugar is restricted so is the output of alcohol kept at a minimum. The formation of dextrin and its inclusion in the beer are encouraged, since this substance is of well-known nutritive value, while as such it cannot ferment, and therefore yield alcohol. A further interesting feature of the process is that it is conducted in closed vessels, so that the gas produced in the limited fermentation is retained to give life and sparkle to the ultimate product. The amount of alcohol produced is under absolute control and it never exceeds that quantity permitted in temperance beverages by the Excise authorities, 2 per cent. of proof spirit, which is equivalent to 0·90 per cent. of absolute alcohol by weight, or 1·16 per cent. by volume. To prevent the possibility of any further development of alcohol the beer is pasteurised, and thus the activity of the ferments is destroyed.

"Nonal" takes the form of both ale and stout, the only difference between them being that, as is the case with the ordinary brewed malt liquors, some burnt malt is added to the "nonal stout." Submitted to analysis in THE LANCET Laboratory the following results were obtained:—

	"Nonal Ale." Per cent.	"Nonal Stout." Per cent.
Alcohol by weight	0·53	0·79
,, ,, volume	0·66	0·99
Proof spirit	1·16	1·74
Maltose	3·20	4·40
Dextrin	3·77	5·24
Protein	0·28	0·48
Mineral matters	0·23	0·30
Phosphoric acid	0·03	0·04
Volatile acidity reckoned as acetic acid	0·006	0·018
Fixed acidity reckoned as lactic acid	0·090	0·18

It will be seen that the composition of these beverages very closely resembles, indeed is almost identical with, that of ordinary malt liquors, with the important exception that the alcohol is practically a negligible quantity, amounting to less than a tenth part of that found in ordinary beer. Further, "nonal" is remarkably palatable and is agreeably but not excessively sparkling. The flavour recalls that of a delicate lager beer. The proportion of nutritives represented in the maltose, dextrin, and protein is equal to that of an ordinary well-brewed ale, while "nonal stout" shows a greater amount of nutritives than do many samples which we have examined which claimed to be nourishing. The soundness of the beer is illustrated in the very small amount of free acidity present. A search for foreign bitter principles was not successful, nor was any foreign preservative found. In view of these facts, it must be conceded that a very satisfactory temperance beverage has at length been supplied. It satisfies the palate, in our opinion, at all events, and it certainly has in its favour the important quality of wholesomeness. It possesses the attributes of a sound, well-brewed malt liquor with what some may be pleased to call the vicious portion practically eliminated.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 10th, Mr. BUTLIN, the President, being in the chair.

Mr. Bilton Pollard was introduced, and having made a declaration in the terms of the oath prescribed by the Charter of 1800, was readmitted a member of the Court of Examiners.

A report was received from the Finance Committee announcing that a further sum of money had been received from the estate of the late Sir Erasmus Wilson on the death of Miss Mattingley.

A report was received from the delegates appointed by the two Royal Colleges to consider a scheme for establishing a system of Conjoint examinations in accordance with Statute 123 of the University of London, and Mr. Butlin, President, Mr. Pearce Gould, Vice-President, and Sir Henry Morris were appointed to represent the College as witnesses before the Royal Commission on University Education in London.

A letter was read from Mr. C. H. Golding-Bird, reporting the proceedings of the Central Midwives Board during the past year, from which we quote the more important points:—

During the year the Board has met 16 times, and there have been 29 meetings of various committees. The number of midwives on the roll (December, 1909) is 28,843; 53 have voluntarily retired; 208 deaths have been reported, whilst 39, for various penal offences, have been struck off the roll; and four more have been "allowed to retire." Of the remaining penal cases, 17 were censured and 11 cautioned; in six sentence has been postponed.

The Board has now 79 recognised training schools, 108 recognised teachers, and 142 approved midwives, who train pupils.

During 1909 six examinations have been held in London and three in each of the provincial centres.

There were in all 2616 candidates and 460 failed to pass, a percentage of failures of 17·5 per cent.

The Board has endeavoured to secure payment for doctors who respond to the call of the midwife in difficult labours, but it is pointed out that nothing but an Act of Parliament can enforce the payment of fees, but short of that the Board has done its best to induce the various local governing bodies to exercise what powers they at present possess in that direction.

Fully alive to that terrible scourge, *Ophthalmia neonatorum*, the Midwives Board had in July, 1908, under its serious consideration the recognition and value of first aid by its midwives in these cases; and drew up, and, after the approval of the Privy Council had been received, issued in December, 1909, to all its midwives, teachers, and pupils, a leaflet giving precise directions how the midwife is to act in such cases; the present authorised and published rules of the Board being neither sufficiently comprehensive nor stringent.

The PRESIDENT reported the delivery of the Hunterian and Arris and Gale Lectures.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ELECTION OF PRESIDENT.

AN extraordinary Comitia was held on March 21st, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

Sir Alfred Keogh, K.C.B., M.D., was admitted a Member of the College.

The PRESIDENT announced that he had nominated the following Fellows to constitute the committee to consider the scheme for establishing a system of conjoint examinations in accordance with Statute 123 of the University of London:—The President, Dr. Norman Moore, Sir William Allchin, Dr. F. Taylor, Sir Thomas Barlow, Dr. J. A. Ormerod, Dr. S. J. Sharkey, Dr. W. Hale White, Dr. W. P. Herringham, Dr. J. Rose Bradford, Dr. E. I. Spriggs, Dr. William Hunter, and Dr. E. H. Starling.

Letters were received from the Harveian librarian, Dr. J. F. Payne, resigning his office, and also his position on the Beri-beri Committee. On the motion of the PRESIDENT Dr. Payne's resignation was received with deep regret, and the thanks of the College were returned to him for the great services he had rendered.

The PRESIDENT then delivered his annual address, in the course of which he referred to the Royal honours granted to Fellows during the past year. He also mentioned the awards and prizes which had been distributed, and gave an account of the lectures and orations which had been delivered. He referred in appropriate terms to the resignation of Dr. E. Liveing as registrar, a post which he had held for many years, and his appointment as emeritus registrar. He likewise mentioned the by-laws which had been passed in regard to the admission of women for the examinations of the College. He read short obituary notices of the Fellows who had died during the previous 12 months:—Dr. Thomas Crawford Hayes, Dr. Rayner Winterbotham Batten, Dr. William Arthur Foxwell, Dr. Henry Radcliffe Crocker, Sir Stephen Mackenzie, Dr. Edward Clapton, Dr. William Rivers Pollock, Dr. William Bramwell Ransom, and Dr. William Page May. Having expressed his obligations to the Fellows for having elected him as President during the past five years, Sir R. Douglas Powell vacated the chair.

Sir WILLIAM S. CHURCH proposed a vote of thanks, which was carried by acclamation, to Sir R. Douglas Powell for his address, which he requested might be printed, and also in the name of the College thanked him for the great services he had rendered to the College during his terms of office.

The election for President then took place. In the first ballot 12 Fellows received votes, but as no Fellow obtained the requisite number of votes a second ballot was taken, when Sir Thomas Barlow was elected by a large majority.

The Senior Censor (Sir WILLIAM ALLCHIN) then delivered to him the insignia of office. The PRESIDENT gave his faith to the College and thanked the Fellows for the honour they had conferred upon him.

The PRESIDENT then dissolved the Comitia.

Public Health.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Repeated Occurrence of Enteric Fever at Jennet Hill and Stanford Dingley in the Rural District of Bradfield, by Dr. R. W. JOHNSTONE.[1]—This report gives a concise account of the circumstances in which a small group of houses in the rural district of Bradfield has sustained a remarkably high rate of attack by enteric fever for many years past, and it forms an important contribution to the literature of research into carrier cases. The special incidence of enteric fever at Jennet Hill was brought to the notice of the Local Government Board by the district council in 1908, and Dr. Johnstone made his first local inquiry early in 1909. Jennet Hill is a collection of cottages, hardly of sufficient importance to call a hamlet, midway between Reading and Newbury. It consists of a row of ten dwellings, known as Lailey's-row, lying in a cul-de-sac off a high road, and nine other dwellings near by. A case of enteric fever occurred in Clay Cross village, about a quarter of a mile south of Jennet Hill, in 1893, but no other cases occurred in the neighbourhood until 1896, when four inhabitants of Jennet Hill were attacked. After that date cases of enteric fever have occurred in Jennet Hill in each of the following years: 1897, 1898, 1899, 1900, 1902, 1904, and 1907, a total of 16 attacks being notified. To these must be added 11 other cases among persons living elsewhere who had been at Jennet Hill before their attack, and in all probability contracted infection there. The population of Jennet Hill is not more than 80 persons. During the period 1893–1907 inclusive only 36 cases of enteric fever were notified from the rural district outside the vicinity of Jennet Hill, with a population of about 15,000. The years in which cases occurred in Jennet Hill did not correspond with those in which the majority of cases occurred in the rest of the rural district, and it is noteworthy that when the cases between 1893 and 1907 were grouped according to the month of attack, those in Jennet Hill showed very little seasonal variation, while in the remainder of the district the usual October maximum was apparent. Dr. Johnstone was naturally unable, on account of the lapse of time, to deal fully with the question of possible infection by way of articles of food or drink brought into the neighbourhood from contaminated sources. But, as he points out, in an agricultural neighbourhood of this kind there is little variety of ordinary diet, and his inquiries tended to negative the suggestion that some special food or drink—mineral water, shell-fish, &c.—likely to convey enteric fever infection had been habitually consumed, and to an exceptional extent, by the Jennet Hill inhabitants. The conditions of water-supply and of excrement disposal were of a kind which might be expected to facilitate the spread of infection. A dip-hole by the roadside, fed by a spring and unprotected from surface washings, formed the water-supply between 1893 and 1903, when the present supply, a tube well into the chalk, was provided. There was, however, an interval in 1897, when the dip-hole was closed, and a shallow well, which the parish council had caused to be made close by, was resorted to instead. Certain of the cases in Jennet Hill occurred during this interval and others have occurred since 1903. Excrement from pail closets is disposed of in the gardens and fields near the houses. The closets of invaded houses have been systematically disinfected, but not until after the removal or recovery of the patient. Thus while soil or water pollution may have contributed in any given year to local spread of infection, they do not appear of themselves to afford an adequate explanation of the continued occurrence of cases year by year which has been above described. Dr. Johnstone adopted this view after his first inquiries and concluded that a probable explanation of the main circumstances would be found in the existence of one or more carrier cases among the inhabitants, especially of certain suspected houses in Lailey's-row. This supposition was verified by the history of the place in 1909, as ascertained by Dr. Johnstone at a further inquiry. On March 27th, 1909, a boy living at 8, Lailey's-row sickened with enteric fever. He had come to Jennet Hill with his family in the previous autumn; he had not been away from home except to a neighbouring school, and he had not been exposed to any known source of infection. Another case suspected to be enteric fever occurred at 9, Lailey's-row in May. A mother, aged 27 years, and her daughter, aged 4 years, went to stay at 8, Lailey's-row on Feb. 25th, 1909, and returned to their home in Newbury rural district on March 15th. The mother had then been ailing for a week and her illness was ultimately diagnosed as enteric fever. The daughter sickened about March 17th with the same disease. These cases, together with the results of Dr. Johnstone's previous inquiry, facilitated attempts to obtain specimens of blood, fæces, and urine of the inhabitants of Jennet Hill for examination, but this was not an easy matter. The inhabitants, Dr. Johnstone remarks, "became suspicious of our motives. Some pleaded outraged modesty, others had religious scruples, and argument and persuasion only made them more obstinate." Eventually, with much pressure and some pecuniary inducement, samples of fæces and urine were obtained from 19 persons, 15 of whom resided in Lailey's-row. They were examined by Dr. J. C. G. Ledingham at the Lister Institute. Six of the blood samples gave a positive reaction with the agglutination test. The bacillus typhosus was not recovered from any of the samples of urine, but four of the samples of fæces contained bacillus typhosus in large quantities. In two of these four cases Dr. Johnstone was not satisfied that the fæces had been those of the persons from whom they were stated to have been obtained. But in regard to the other two, A and D, no doubt arose, and each of these persons may therefore be regarded as a potential carrier case. The woman A had no history of enteric fever or of any illness bearing suspicious resemblance to enteric fever, although other members of her household were alleged to have had the disease in 1892. In 1893 she was living at Clay Hill, and in that year her next-door neighbour was attacked by enteric fever. Immediately afterwards A removed to 9, Lailey's-row at Jennet Hill, where she has been since. It is from 1896 onwards that the succession of cases in Lailey's-row has occurred. But in view of the history of other cases which have been investigated, the occurrence of this interval could not be said to negative the hypothesis that A had been from time to time a carrier of infection since her arrival at Jennet Hill. The second case, D, is that of a married woman who came to Lailey's-row in September, 1903. Here also it is remarkable that she had no history of having suffered from enteric fever or anything resembling it. One case occurred in her family in 1906. In 1908 she moved to a village three miles away, and two cases of enteric fever have since occurred in connexion with the house which she then occupied. The conveyance of infective material from the carrier to the victims is usually effected directly, as a result of personal contact, or indirectly by means of food or other articles contaminated by him. In the present instance inquiries directed to ascertain the degree of intimacy between the inhabitants of Jennet Hill were singularly negative in their results: the inhabitants "never frequented each other's houses, never borrowed or lent cooking or eating utensils, never had fruit or vegetables from each other's gardens, never smoked each other's pipes, and never shook hands with each other." Dr. Johnstone adds, however, that having seen some of the inhabitants in their neighbours' houses, he was not disposed to place great reliance on the answers he received. The *modus operandi* of the agencies which transmitted infection from the carrier cases remains a matter of conjecture.

[1] Reports to the Local Government Board on Public Health and Medical Subjects. [New Series, No. 22. London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 4*d*.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1910.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	868	441	—	81	1	23	300	10	1724	4·6	—	68	23	43	214	—	11	—	47	406	1·1	5896	16·6
West Districts.																									
Paddington	153,004	—	22	18	—	4	—	—	11	1	56	4·8	—	12	2	2	7	—	—	—	—	23	2·0	190	17·3
Kensington	184,635	—	16	8	—	4	—	4	13	1	46	3·2	—	1	—	1	2	—	—	—	—	4	0·3	183	13·8
Hammersmith	127,413	—	41	14	—	3	—	—	2	—	60	6·1	—	8	1	1	2	—	—	—	4	16	1·6	143	15·2
Fulham	181,282	—	39	26	—	2	—	1	7	—	75	5·4	—	3	—	3	13	—	—	—	6	25	1·8	172	13·0
Chelsea	75,457	—	11	2	—	6	—	—	5	—	24	4·1	—	5	—	—	1	—	1	—	1	8	1·4	105	18·8
City of Westminster	167,233	—	24	11	—	4	—	—	6	1	46	3·6	—	—	—	—	1	—	—	—	4	5	0·4	196	17·0
North Districts.																									
St. Marylebone	125,195	—	20	14	—	2	—	1	7	1	45	4·7	—	1	—	1	7	—	—	—	—	9	0·9	176	19·5
Hampstead	96,729	—	18	4	—	1	—	—	3	—	26	3·5	—	3	—	—	—	—	—	—	—	3	0·4	82	12·6
St. Pancras	237,792	—	78	18	—	2	—	1	15	1	115	6·3	—	1	3	3	8	—	—	—	3	18	1·0	310	17·8
Islington	353,356	—	85	30	—	2	—	3	16	1	137	5·1	—	—	1	3	25	—	1	—	2	32	1·2	434	16·6
Stoke Newington	54,838	—	6	10	—	1	—	—	4	—	21	5·0	—	—	—	—	—	—	—	—	1	1	0·2	50	12·4
Hackney	239,979	—	30	13	—	—	—	—	21	1	65	3·5	—	6	1	1	8	—	—	—	1	17	0·9	294	16·7
Central Districts.																									
Holborn	53,142	—	6	—	—	2	—	—	2	—	10	2·5	—	—	—	1	2	—	—	—	1	4	1·0	91	24·0
Finsbury	94,578	—	9	7	—	1	—	—	14	—	31	4·3	—	1	1	—	5	—	—	—	1	8	1·1	168	24·0
City of London	17,132	—	1	1	—	—	—	—	1	—	3	2·3	—	—	—	—	1	—	—	—	—	1	0·8	31	25·9
East Districts.																									
Shoreditch	114,387	—	12	18	—	1	—	2	9	—	42	4·8	—	1	—	4	3	—	—	—	5	13	1·5	177	21·2
Bethnal Green	131,579	—	14	14	—	2	—	2	5	1	38	3·8	—	2	—	2	9	—	—	—	—	13	1·3	170	17·0
Stepney	314,379	—	37	31	—	12	—	2	30	1	113	4·7	—	4	2	4	29	—	1	—	5	45	1·9	414	18·0
Poplar	172,432	—	29	9	—	3	—	—	11	—	52	3·9	—	3	—	4	13	—	2	—	3	25	1·9	234	18·3
South Districts.																									
Southwark	211,832	—	28	16	—	3	—	1	18	—	66	4·1	—	1	2	—	4	—	2	—	3	12	0·7	290	18·6
Bermondsey	127,238	—	20	10	—	1	—	1	9	—	41	4·2	—	1	—	2	3	—	—	—	1	7	0·7	179	18·7
Lambeth	327,074	—	75	27	—	2	—	1	14	—	119	4·7	—	1	7	2	7	—	1	—	—	18	0·7	409	16·8
Battersea	188,222	—	35	14	—	2	1	3	14	1	70	4·8	—	5	1	1	7	—	1	—	—	15	1·1	178	13·2
Wandsworth	305,838	—	67	26	—	5	—	—	12	—	110	4·7	—	2	—	—	13	—	—	—	2	17	0·7	280	13·1
Camberwell	286,058	—	43	19	—	10	—	1	13	—	86	3·9	—	2	—	1	8	—	1	—	2	14	0·6	335	15·9
Deptford	119,642	—	16	13	—	2	—	—	10	—	41	4·5	—	1	—	—	11	—	—	—	—	12	1·3	169	19·3
Greenwich	112,935	—	11	14	—	2	—	—	11	—	38	4·4	—	4	1	3	15	—	—	—	1	24	2·8	141	16·6
Lewisham	164,899	—	56	27	—	2	—	—	6	—	91	7·2	—	—	1	2	6	—	1	—	1	11	0·9	151	12·4
Woolwich	135,422	—	19	27	—	—	—	—	11	—	57	5·5	—	—	—	2	4	—	—	—	—	6	0·6	135	13·9
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·6 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates had been 5·8, 5·4, and 4·5 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, Hampstead, Hackney, Holborn, and the City of London; and the highest rates in Hammersmith, Fulham, St. Pancras, Lewisham, and Woolwich. The prevalence of scarlet fever showed a slight increase last month; among the several metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, Fulham, St. Pancras, Islington, Lambeth, and Lewisham. The Metropolitan Asylums Hospitals contained 1740 scarlet fever patients at the end of last month, against 2460, 2329, and 1962 at the end of the three preceding months; the weekly admissions averaged 204, against 289, 250, and 198 in the three preceding months. Diphtheria showed a slightly decreased prevalence last month; the greatest proportional prevalence of this disease was recorded in Paddington, Fulham, Stoke Newington, Shoreditch, Greenwich, Lewisham, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 940, 904, and 883 at the end of the three preceding months, had risen again to 908 at the end of last month; the weekly admissions averaged 93, against 104, 97, and 96 in the three preceding months. The prevalence of enteric fever showed a marked increase over that recorded in the previous month; this disease was proportionally most prevalent in Paddington, Chelsea, Holborn, Stepney, and Camberwell. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month was 75, against 62 at the end of each of the two preceding months; the weekly admissions averaged 12, against 10, 8, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Stepney, Southwark, Greenwich, Deptford, and Woolwich. The 23 cases of puerperal fever notified during the month included 4 belonging to Kensington, 3 each to Islington and Battersea, and 2 each to Shoreditch, Bethnal Green, and Stepney. Ten cases of cerebro-spinal meningitis were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the four weeks ending Feb. 26th the deaths of 5896 London residents were registered, equal to a corrected annual death-rate of 16·6 per 1000; in the three preceding months the corresponding rates were 14·5, 15·8, and 14·8 per 1000. The lowest rates last month were 12·4 in Stoke Newington and in Lewisham, 12·6 in Hampstead, 13·0 in Fulham, 13·1 in Wandsworth, and 13·2 in Battersea; the highest rates were 19·3 in Deptford, 19·5 in St. Marylebone, 21·2 in Shoreditch, 24·0 in Holborn and in Finsbury, and 25·9 in the City of London. The 5896 deaths from all causes included 406 which were referred to the principal infectious diseases; of these 68 resulted from measles, 23 from scarlet fever, 43 from diphtheria, 214 from whooping-cough, 11 from enteric fever, and 47 from diarrhœa. The lowest death-rates from these infectious diseases in the aggregate were recorded in Kensington, the City of Westminster, Hampstead, Stoke Newington, Camberwell, and Woolwich; and the highest rates in Paddington, Hammersmith, Fulham, Stepney, Poplar, and Greenwich.

The 68 fatal cases of measles were less than half the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Paddington, Hammersmith, Chelsea, Hampstead, Hackney, Battersea, and Greenwich. The 23 deaths from scarlet fever were 17 fewer than the corrected average number; of these 23 deaths, 7 belonged to Lambeth, 3 to St. Pancras, and 2 each to Paddington, Stepney, and Southwark. The 43 fatal cases of diphtheria showed a decline of 26 from the corrected average number; this disease was proportionally most fatal in Fulham, Shoreditch, Poplar, Bermondsey, and Greenwich. The 214 deaths from whooping-cough exceeded by 70 the corrected average number; the highest death-rates from this disease last month were recorded in Fulham, Islington, Bethnal Green, Stepney, Poplar, Deptford, and Greenwich. The 11 deaths referred to enteric fever were slightly below the corrected average number; 2 of these deaths belonged to Poplar and 2 to Southwark. The 47 fatal cases of diarrhœa were 14 below the corrected average number; this disease was proportionally most fatal in Hammersmith, Fulham, the City of Westminster, and Shoreditch. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 14·9 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet-Surgeon John Leslie Barrington has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Jan. 26th, 1910).

The following appointments have been notified:—Fleet-Surgeons: A. G. W. Bowen to the *Black Prince*, on recommissioning; J. C. Ferguson, J. F. Hall, A. Maclean, H. Clift, and G. Ley to the *President*, additional, for hospital course. Staff-Surgeons: W. H. O. Garde, J. W. Fergusson, S. H. Facey, J. P. H. Greenhalgh, J. Macdonald, A. J. Hewitt, J. Mowat, and J. W. Craig to the *President*, additional, for hospital course. Surgeons: C. A. G. Phipps, A. B. Marsh, J. McA. Holmes, E. Cameron, L. S. Whitwam to the *President*, additional, for hospital course; and W. G. Edwards to the *Black Prince*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Colonel T. J. R. Lucas, C.B., from Bangalore, has been appointed Principal Medical Officer, Abbottabad and Sialkot Brigades. Lieutenant-Colonel G. F. Gubbin, at Colaba, has been selected for increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel H. D. Rowan, from Rawal Pindi, has been appointed to Aldershot. Lieutenant-Colonel T. du B. Whaite has been transferred from the Eastern Command to Woolwich, and appointed Senior Medical Officer at the Royal Arsenal. Lieutenant-Colonel G. G. Adams has embarked for India. Lieutenant-Colonel A. R. Aldridge has been appointed Instructor at the School of Army Sanitation, Aldershot, vice Brevet-Colonel R. H. Firth, who has embarked for a tour of service in India. Lieutenant-Colonel G. Wilson, from Multan, has been appointed to the Eastern Command. Major S. G. Moores, Major T. B. Beach, Major C. W. R. Healy, and Major J. H. E. Austin have been selected for increased rate of pay from Feb. 1st, under Article 317 of the Royal Warrant. Major A. H. O. Young, on arrival from Bermuda, has been appointed to the Northern Command. Major A. E. Master has been transferred from the Eastern Command to Woolwich for duty at the Royal Arsenal. Major C. T. Samman, from Shorncliffe, has embarked for India. Major L. F. Smith, in charge of the Brigade Laboratory at Nowshera, has been appointed a specialist in the prevention of disease, with effect from Jan. 8th. Major B. Forde, from Bloemfontein, has been appointed for duty at Wynberg. Captain A. L. Otway from Mhow has been appointed for duty in the Dublin District. Captain E. M. Glanvill, from Harrismith, has been posted to the Southern Command, and Captain E. C. Whitehead, from Pretoria, has been posted to the Irish Command. Captain W. Tilbury-Brown, from Colchester, has been selected for the appointment of Sanitary Officer, Burma Division. Captain A. M. Rose, from Bermuda, has been posted for duty at Aldershot. Captain P. J. Dwyer, on arrival at Aden from India, has been appointed to the charge of the Brigade Laboratory. Lieutenant J. C. L. Kingston has been posted to the Southern Command. Lieutenant W. Mathieson is appointed for duty at Queen Alexandra's Military Hospital, Millbank. Lieutenant S. Field, on return from special service in Somaliland, has been posted for duty in the Eastern Command. Lieutenant J. H. Gurley has arrived home on leave from Egypt. Lieutenant A. Shepherd, Lieutenant W. S. Dunn, Lieutenant F. B. Dalgliesh, Lieutenant S. G. Walker, and Lieutenant F. M. Hewson have embarked for India. Lieutenant A. C. Amy has been transferred from Ranikhet to Bareilly, and Lieutenant A. H. Heslop has been transferred from Sialkot to Rawal Pindi.

INDIAN MEDICAL SERVICE.

Colonel H. K. McKay, C.B., C.I.E., Bengal, Principal Medical Officer, Burma Division, has been permitted to retire from the service from Dec. 3rd last. Colonel H. StClare Carruthers, Madras, has been selected for the appointment of Principal Medical Officer, Secunderabad Brigade. Lieutenant-Colonel J. C. Marsden, Madras, has been permitted to retire with effect from Feb. 10th. Lieutenant-Colonel R. J. Marks has had his leave extended. Major Clemesha has been appointed to officiate as Sanitary Commissioner, Bengal Presidency, vice Lieutenant-Colonel Clarkson, proceeding on two years' combined leave and furlough out of India. Major C. M. Matthews has had his leave extended by six months Major Graves has been posted for temporary duty in the Madras Presidency. Major J. Davidson, in charge of the Dehra Dun Brigade Laboratory, has been appointed a specialist in the prevention of disease from Dec. 10th last. Major G. T. Birdwood, on completion of a course of special duty in the Bacteriological Laboratories of the Institute of Preventive Medicine at Kasauli, has been appointed Civil Surgeon of Mussooree. Captain W. T. McCown has been permitted an extension of his leave by six months on medical certificate. Captain Husband has been posted to Burma.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Northern General Hospital: Captain Archibald Young to be Major (dated April 18th, 1909). Major Archibald Young resigns his commission (dated Nov. 20th, 1909). Captain Arthur R. Hallam to be Major (dated Nov. 20th, 1909).

For attachment to Units other than Medical Units.—Lieutenant Albert Willis Warren Swettenham, from the South Wales Mounted Brigade Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Jan. 1st, 1910).

APPENDICITIS IN THE GERMAN NAVY.

The last statistical report of the German Navy contains an interesting account of the 272 cases of appendicitis which occurred in the service during 1906–07 by Marine Stabsarzt Dr. MacLean. The number of cases had increased from 185 in the preceding year. No cause could be assigned, but the disease was more frequent in China, where all intestinal diseases are prevalent, but where those ashore were attacked three times as frequently as those on ships. Operation, we learn from the report, is becoming more frequent in cases of appendicitis, and when the operation was performed immediately or at the onset of symptoms the mortality was least and the successful result more rapidly secured. 84 operations were done at the onset and 65 in a quiet interval. In 26 cases there was an abscess; in 9 general purulent peritonitis had supervened. Of these last, 6 cases died. Only 1 case died uncomplicated by peritonitis, and in this case death was due to œdema of the lungs and heart failure, confirming the view that the operation for appendicitis is chiefly dangerous if not done in time. Early operation was specially attempted at Kiaochau (Tsingtau) in China. There the patients were put on solid food the day after the operation and took it well and got up about the tenth day, being generally discharged in four weeks. The mortality was 2 per cent. These observations enforce the importance of early diagnosis and immediate operation.

THE SECOND INTERNATIONAL CONGRESS OF OCCUPATIONAL DISEASES.—The following programme of discussions has been arranged for this congress, which, as we announced last week, will be held at Brussels between Sept. 10th and 14th next under the patronage of the Belgian Government:—1. Can occupational diseases be distinguished from industrial accidents, and if so, what are their points of difference? 2. What medical organisation exists for the benefit of workers in factories, workshops, dockyards, and mines? 3. The present state of preventive measures against ankylostomiasis. 4. Disorders of the eye and of vision in their relation to occupational diseases. 5. Work in compressed air. 6. Occupational intoxications. Anyone interested in these subjects and desiring to attend the congress should apply to Mr. W. F. Dearden, D.P.H., 15, Salisbury Buildings, Trafford-road, Manchester, joint honorary secretary, with Dr. T. M. Legge, of the British National Committee for the Congress.

Correspondence.

"Audi alteram partem."

THE PREVALENCE OF TUBERCULOSIS AMONG SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—Dr. Philip's letter in the issue of March 12th shows how desirable it is to come to some general understanding as to what is to be taken to constitute evidence of tuberculosis in children for school purposes. If we are to take reaction to tuberculin, enlargement of cervical glands, bronchitic râles or fine crepitations in the chest, cough or poor nutrition—singly or together—as indicating tuberculosis, no doubt 30, or even 50, per cent. may be a fair estimate of the amount of tuberculosis in children of school age. We might even concede 85 to 90 per cent.—it is chiefly a question as to what you are searching for.

We are all, probably, harbouring pneumococci in our bodies, but we cannot be therefore said to have pneumonia, and in all densely crowded cities it is probable that most of us have some tubercle bacilli somewhere about us. Many of us have some glands hardened in protecting us from these or other bacteria which have got through the mucous membrane of the throat and upper air-passages or through decayed teeth; many of us would react to von Pirquet's test. Some, including children at school (or who ought to be at school), have even had active tuberculosis of the lungs which has left a scar.

Dr. Philip takes 12 palpable glands and certain signs (which he does not specify) on percussion and auscultation at the apices of the lungs as evidence of tuberculosis. Apparently he was not quite convinced as to the value of the evidence, since he "wrote off 15 per cent. of the whole" to arrive at his total of 30 per cent. of tuberculous children in the schools. I imagine that the percentage prevalence of tuberculosis amongst children attending school arrived at by this method will hardly be considered convincing; it is too much from one point of view and too little from another. Yet, supposing we allow that 30 per cent. of town children are, or have been, the subjects of tuberculous implantation—and I am quite prepared, as I have said, to accept even a higher estimate—is not the practical point after all to find out what children are, by reason of tuberculosis, unfit to attend school either on account of harm to themselves or because of possible danger to others?

There are unfortunately many children in the schools who should be sent to sanatoriums or to open-air schools; it is also unfortunately true that there are many children kept out of school for "tuberculosis" or "consumption" who would be very much better off at school. Once a child is excluded as consumptive neither parents nor teachers seem able to allow that he can ever have recovered; nor with such a test as Dr. Philip advocates would such a child ever be able to pass the school doctor. Thus the child goes on, missing all the educational advantages and being taught to look on himself as one who must not work. We cannot get physical perfection in the children of the poorer parts of our large towns, and it is, in my opinion, unwise to insist on too rigid a medical test in estimating the child's fitness for school attendance, provided we are careful to exclude those whose health may be prejudiced by attendance and those who may be prejudicial to others. Most of Dr. Philip's 30 per cent. would be better at school than at home, and very few, if any, would be a source of danger to others.

I agree entirely with Dr. Philip that the standard of clinical training in the physical examination of the chest needs raising; but we must, on the other hand, avoid such refinement that every chest is pronounced diseased which presents any sign differing from what belongs to the ideal healthy chest—often termed "normal" in error, for few children, and practically no adults, satisfy this ideal of healthy lungs entirely and always.

I am, Sir, yours faithfully,

London, March 18th, 1910. J. EDWARD SQUIRE.

To the Editor of THE LANCET.

SIR,—There appeared in THE LANCET of March 12th (p. 751) a most instructive letter from the pen of Dr. R. W. Philip of Edinburgh in which he brought forward interesting statistics

regarding the prevalence of tuberculosis in school children. The evidence of one who is a pioneer in this branch of medicine merits close study. I should like to submit some general considerations regarding pulmonary tuberculosis among school children in relation to medical inspection.

Dr. Philip lays stress on a point I have elsewhere[1] referred to—namely, that the results obtained by medical inspectors are not at present comparable, because there is no uniform standard on which a diagnosis can be based. After making every allowance for variations in the incidence of tuberculosis in different districts it seems to me that the divergent statistics furnished by medical inspectors can only be explained by assuming that some adopt a more rigid standard than others. Then the figures given must not be taken as a true estimate of the prevalence of this disease among school children. I understand that in medical inspection no account is taken of those absent from school, and that the percentages given only refer to the children actually inspected in schools by the medical officers.

It may be taken as being generally true that pulmonary tuberculosis in school children is more prevalent than is imagined—witness the post-mortem records of children who have succumbed to other diseases but in whom there is evidence of healed tuberculous lesions. It is almost universally admitted that acute pulmonary tuberculosis is a very fatal disease in children, and therefore it is surely logical to conclude that these healed lesions represent in the majority of cases previous chronic or subacute tuberculous foci. If I might be allowed to indulge in a hypothetical statement, I venture to say that, were it possible to directly inspect the lungs during life, it is extremely likely that one would find early chronic lesions in many cases where such were never suspected.

One factor that tends to cause too low an estimate of pulmonary tuberculosis among those in this age group is difficulty of diagnosis. It is much less easy to diagnose pulmonary tuberculosis in the child than in the adult, owing to the greater difficulty of interpreting the physical signs met with. There is no single sign or symptom pathognomonic of this disease in the child, and I am not convinced that the association of dulness on percussion, bronchial breathing, and crepitations which may or may not be intermittent, in an emaciated anæmic child is absolutely diagnostic of pulmonary tuberculosis. To cite only one example, I have seen the above picture in children who suffered from enlarged tonsils and adenoids, but in whom after operation the physical signs disappeared within a few days and the symptoms rapidly improved. Under such circumstances I hardly think a diagnosis of tuberculosis is justified.

It may be that the tests adopted by Dr. Philip are sufficiently rigid. But let me point out that long practice doubtless affords Dr. Philip that delicacy of diagnostic acumen which permits of his making a positive diagnosis in cases where the uninitiated or those who have had less experience would be unable to arrive at a definite conclusion.

If the diagnosis of this disease is difficult under ordinary circumstances it is much more difficult when undertaken during school inspection. The medical inspector is hampered by the foolish attempt of the Education Department to rush the work. It cannot be expected that very early cases of this disease will be recognised if the inspector has to examine so many per diem, and it has also to be remembered that the examination is not merely to determine the presence or absence of lung disease. It may be argued that it was not intended in medical inspection to enter into refined diagnostic work, but if medical inspection is to be undertaken at all, surely it ought to be thoroughly and efficiently done. Dr. Philip very aptly remarks that many of these children appear in good health and thus the possibility of pulmonary affections is overlooked.

Apart altogether from the practical impossibility of diagnosing early tuberculous infection of the lungs during the course of one short examination, it should be noted that the conditions under which the inspector has to conduct the examinations are often not ideal. For instance, the child may be so alarmed at the very idea of being examined by a doctor that investigation is difficult and accurate observations may be impossible, or the room allotted to the school officer may be so situated that the quiet necessary for delicate percussion and auscultation may not be obtained.

I believe that the problem might be dealt with fairly satisfactorily if there were freer interchange and more coöperation between medical inspectors and family practitioners. I should suggest that any children in whom there was the slightest suspicion of pulmonary tuberculosis should be re-examined specially on another day, and if the signs and symptoms pointed to possible lung involvement then the child should be referred to the family medical attendant for further investigation and observation.

In a paper[2] in your columns last year I endeavoured to show how important it is to recognise early tuberculous mediastinal glands, and I referred to some of the aids that might be employed to substantiate or reject the provisional diagnosis. These additional diagnostic weapons—for example, X rays, tuberculin tests, &c.—cannot be used by the medical inspector. They can best be applied by the family doctor, or if necessary by a specialist. My contention is that the medical inspector with the ordinary means of diagnosis at his disposal, based on symptoms and physical signs, cannot with certainty diagnose early chronic tuberculosis of the lungs in every case in which it exists.

I should like to subscribe to the sentiments expressed by Dr. Philip in his concluding paragraph, in which he points out that the training of the medical student is faulty. There is not the slightest doubt that formerly the student was led to believe that chronic pulmonary tuberculosis was essentially a disease of adult life, and his attention was directed far more to the clinical picture of acute tuberculosis of the lungs than to the early phenomena of the insidious more chronic variety.

I am afraid, Sir, I have written at greater length than I had intended, but I crave your indulgence on the ground that the subject is of very great importance and has a direct bearing on the future physique of our race. In medical inspection cases of well-marked pulmonary tuberculosis will probably be readily recognised, but there remain a large number of border-line cases, children who are "physiologically delicate," "pretuberculous"—call them what you will. These children are prone to, and may under adverse circumstances develop, pulmonary tuberculosis. They are physically defective and are not able to compete on equal terms with their more fortunate companions who are in good health. They do not, as a rule, require to be kept from school, but they should be under medical supervision, and this supervision can best be carried out at the hands of the family doctor or, in necessary cases, by the medical staff of the local hospital. The problem of the future of the tuberculous child, or the child who is supposed to be phthisical, is of the utmost importance, and in conclusion I would urge that thorough and efficient medical inspection would undoubtedly assist us in our efforts to deal with this matter.

I am, Sirs, yours faithfully,

JOHN ALLAN, M.D. Edin., D.P.H.

Edinburgh, March 16th, 1910.

[1] Brit. Med. Jour., Dec. 11th, 1909

THE INFECTIVENESS OF SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—It is sad to see the lessons of the past constantly forgotten. Our fathers forgot influenza, and we have needed the serious epidemic of the last 20 years to make us study the records of the eighteenth century. Sydenham called scarlet fever "*hoc morbi nomen*," but Trousseau in his well-known lecture relates in a way that I have never forgotten how scarlet fever may run a mild course for years and then become virulent again. Dr. R. Milne has had a series of mild cases such as we have had in Birmingham, where the chairman of the health committee has boasted that there has not been a death among the last 800 cases treated at the City Fever Hospital. But what does this prove? Merely that at a certain time or in a certain place scarlet fever may be a very mild disease, but at and time or place it may again become virulent, and everyone who has seen malignant scarlet fever will agree that it is a most terrible disease. I shudder when I think of cases I have seen, and hope I may never meet with another.

I am, Sir, yours faithfully,

Birmingham, March 21st, 1910. ROBERT SAUNDBY.

[2] THE LANCET, Oct. 23rd, 1909, p. 1209.

LEGISLATION IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—To those interested in the question of legislation upon anæsthetics the report of the Anæsthetics Committee of the Royal College of Surgeons of England [1] contains one recommendation which is likely to cause disappointment. In general the committee finds itself in accord with the conclusions of the General Medical Council, for which we may be thankful, but in one important particular an alteration is suggested. This alteration affects the question of permitting dental practitioners to administer certain specified anæsthetics "for operations performed by duly qualified medical practitioners." That is to say, the dentist may not only give certain anæsthetics for the performance of dental operations, a position which I think all are now agreed to grant, but he may act as anæsthetist for the performance of any other operation provided he uses one of the specified anæsthetics. The main object of legislation in this matter was, I suppose, to protect the public. This was to be achieved by raising the general competency of the medical profession in the matter of anæsthetics and by debarring the medically unqualified from administering these agents. Having provided for these aims by concurring with the conclusions of the General Medical Council, the Anæsthetics Committee of the College adopt an exactly opposite attitude by the inclusion of the suggested alteration. Having provided for numerous competent anæsthetists among the rank and file of medical men they then say to the public in effect: "You can be anæsthetised also for your operation, whatever it is, by a man who has been taught to give anæsthetics for the extraction of teeth." Surely, Sir, it would be just as logical to extend in the same way the bounds which limit the operations of the qualified dental surgeon?

If being taught to give anæsthetics for dental operations qualifies him to give them under any and all conditions, then being taught to operate on the teeth should at least qualify him to perform any other operation within the mouth. His sphere should then include the removal of tonsils, excision of tongues, opening retropharyngeal abscesses, &c. The dangers of thus extending the scope of a man who is, medically and surgically speaking, only partially qualified, are at once apparent. Yet they are no greater than those, equally apparent to all familiar with anæsthetics, which arise in giving the same man a free hand with his anæsthetics in such conditions as are constantly met with in practice. How is such a man to recognise when he meets them the conditions in which his specified anæsthetics are dangerous? How is he to be qualified to meet dangers when they arise? What experience or training will there be behind him to enable him even to know which of his specified anæsthetics he should choose in a particular case?

Speaking, Sir, with all the great respect due to the members of the Anæsthetics Committee of the College, I would maintain that their suggested alteration is illogical because it is in opposition to the spirit of their other recommendations, and unwise because it would cripple their good effect. Yet another argument may be urged against this suggested alteration, derived from the respective numbers of medical and of dental practitioners. There are roughly speaking some 30,000 of the former to 5000 of the latter in the United Kingdom. It is probable, therefore, that the hands of the latter are already even more occupied than those of the former, and that any work, even if it could be done equally well by either body, should be delegated to the medical rather than to the dental profession. Still more is this the case when, as in the present instance, the work is such as can only be safely and properly entrusted to those who have had complete medical training. By dentists I refer, of course, in this letter to those dental surgeons, at present the great majority, who have only a dental qualification.

I am, Sir, yours faithfully,

March 19th, 1910. J. BLUMFELD.

IN GOOD CAUSE.

To the Editor of THE LANCET.

SIR,—Owing to the untimely death of Professor Alec Fraser his widow has been left in very straitened circumstances. To help her a subscription list has been opened, and the following have either promised or sent in the amounts opposite to their names. Those who have promised and those intending to subscribe should forward their subscriptions without delay to the honorary treasurer of the fund.—We are, Sir, yours faithfully,

JOHN LENTAIGNE,
President, Royal College of Surgeons in Ireland.
ROBERT H. WOODS,
Vice-President, Royal College of Surgeons in Ireland.
CHARLES A. CAMERON,
Secretary, Royal College of Surgeons in Ireland.
WILLIAM TAYLOR,
Honorary Treasurer of the Fund.

47, Fitzwilliam-square, West Dublin, March 9th, 1910.

The following subscriptions have already been promised:—

	£	s.	d.
Mr. John Lentaigne ...	10	10	0
Mr. Robert H. Woods ...	10	10	0
Sir Charles A. Cameron C.B.	10	10	0
Sir Thomas Myles	10	10	0
Sir Charles B. Ball	10	10	0
Mr. John B. Story	10	10	0
Mr. Henry G. Sherlock...	10	10	0
Mr. William Taylor ...	10	10	0
Sir Henry R. Swanzy ...	10	10	0
Sir Arthur Chance	10	10	0
Mr. R. Charles B. Maunsell	10	10	0
Mr. T. E. Gordon	10	10	0
Mr. Edward H. Taylor...	10	10	0
Sir W. Thornley Stoker	10	10	0
Dr. A. Francis Dixon ...	10	10	0
Mr. S. Horace Law... ...	5	5	0
Mr. D. Kennedy	5	5	0
Professor B.C.A. Windle	5	5	0
His Honour Judge Shaw	5	5	0
Mr. R. Lane Joynt... ...	5	5	0
Sir Lambert Ormsby ...	5	5	0
Professor Arthur H. White	4	4	0
Mr. Henry Stokes	4	4	0
Mr. R. Bolton M'Causland...	3	3	0
Mr. W. I. Wheeler... ...	3	3	0
Mr. D. Edgar Flinn ...	3	3	0
Mr. L. G. Gunn	3	3	0
Mr. G. Jameson Johnston	3	3	0
Mr. P. W. Maxwell ...	3	3	0
Mr. David Turner	3	3	0
Sir C. A. K. Ball	3	3	0
Mr. Trevor N. Smith ...	2	2	0
Mr. R. R. Leeper	2	2	0
Mr. Seton Pringle	2	2	0
Mr. A. W. W. Baker ...	2	2	0
Mr. Henry W. Oulton ...	2	2	0
Mr. A. J. Smith	2	2	0
Mr. George Sheppard ...	2	2	0
Mr. Arthur H. Benson...	2	2	0
Mr. W. J. Hepburn ...	2	2	0
Mr. H. R. C. Rutherford	1	1	0
Mr. J. M. Redington ...	1	1	0
Mr. W. L. Murphy	1	1	0
Dr. G. C. Sneyd	1	1	0
Mr. D. N. Morgan... ...	1	1	0
Mr. C. M. Benson	1	1	0
Dr. W. M. Courtenay ...	1	1	0
Mr. Charles Greer	1	1	0
Dr. C. B. Pasley	1	0	0
Mrs. Gleeson	1	0	0
Miss Gleeson	0	10	0
Students R.C.S.I., per Mr. T. M. Thomson ...	11	4	4
Total	£263	12	4

POST-GRADUATE LECTURES.

To the Editor of THE LANCET.

SIR,—It is absolutely impossible for the large majority of country practitioners to attend courses of lectures in London. It occurs to me that it might be possible to bring the lectures within our reach on the lines of the University Extension Lectures. Perhaps arrangements might be made to hold courses at the county hospitals where there would be material for clinical instruction. I feel sure that a great many of us would gladly avail ourselves of such an opportunity of bringing our knowledge more up to date.

I am, Sir, yours faithfully,

Uckfield, Sussex March 19th, 1910. E. H. SWEET.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—Mr. Moullin still leaves my question unanswered. The question I have raised is, "Are specialists in gastric surgery in a position to make a *general* statement from the cases sent them for operation, as to the frequency with which clinical proof of the existence of gastric ulcer precedes the onset of gastric cancer?" I say emphatically they are not, because the material they are dealing with is highly specialised, consisting largely of cases of gastric ulcer, old and recent. To this question Mr. Moullin has not replied. He now states that he does "not attach the least importance" to the opinions of the authorities I quoted, because "facts with which they were not acquainted have come to light since those opinions were formed." I challenge him to produce any facts justifying so strong a statement.

Dr. Wilson and Dr. MacCarty's paper does not help him, because they are in the same position as himself. But it affords a good illustration of the sort of material with which specialists in gastric surgery deal. Of 210 gastric cases operated on about 80 per cent. were cases of gastric ulcer, old or recent, complicated or not with gastric cancer. How many of the ulcers followed by cancer were sent for operation in mistake for gastric ulcer, or as actual cases of "ulcus carcinomatosum," or simply in doubt as "if not cancer, at all events intractable or recurring ulcer needing operation," we

[1] THE LANCET, Feb. 19th, p. 542.

are not told. Such a series simply proves nothing as regards the frequency with which ulcer precedes cancer in general, and it is amazing such capable men cannot see it.

Mr. Moullin is very strong on "facts," but he confuses "facts" with the "inferences from facts." His facts, no doubt, are right enough. It is his inferences that I dispute. I observe he has not withdrawn the pathological statement which I showed to be erroneous in my last letter.

I am, Sir, yours faithfully,

Exeter, March 21st, 1910. W. GORDON.

CONGENITAL DIAPHRAGMATIC HERNIA.

To the Editor of THE LANCET.

SIR,—On March 5th I was requested by the coroner to examine the body of an infant, aged 11 months, who had died, no medical aid having been called in. On opening the thorax I found the left half to contain what appeared like, and proved to be, peritoneum, the division of which disclosed about two-thirds of the entire small intestine and a small lobule of liver. At the very apex was an extremely atrophied lung ending in three small tentacles of lung tissue. Underneath this "peritoneal cyst" I found the heart closely bound, by its pericardium, to the left of the spinal column.

Anteriorly, from the median line for about two inches to the left the diaphragm was free and presented a falciform arch with tendinous border, through which the hernia had found its way into the thorax, probably very early in life, judging by the very atrophied lung. There was no strangulation, and the intestines had apparently performed their functions until death. The right lung was in a state of red hepatisation, accounting for the cause of death.

Perhaps you will consider this brief record sufficiently interesting for publication. May I add that it would interest me, and I hope some others, to learn of similar cases which may have been recognised during life? I would imagine that auscultation and percussion would have presented more curious and puzzling features than merely dulness of the right, and hyper-resonance of the left, with its "borborygmic râles" (?)

I am, Sir, yours faithfully,

WILLIAM A. FOX, L.R.C.S. Edin.

Grange-over-Sands, March 12th, 1910.

TO MEDICAL FREEMASONS.

To the Editor of THE LANCET.

SIR,—May I appeal to my brother masons who have votes to spare to send them to Mrs. Knight, 10, Elma-road, West Green-road, Tottenham, or to,

Yours faithfully,

138, Harley-street, W., March 12th, 1910. FRED. J. SMITH.

To the Editor of THE LANCET.

SIR,—May I once again through the medium of your widely read columns appeal to medical men, and medical Freemasons in particular, for votes for the Masonic charities. At the forthcoming elections in April and May there are two medical candidates. Votes for any of the Masonic institutions are equally acceptable, as exchanges can be effected, and will be gratefully received and acknowledged by me.

I am, Sir, yours faithfully,

WILLIAM WILSON.

Secretary, St. Luke's Medical Lodge of Instruction.

184, Goldhawk-road, W., March 18th, 1909.

HEMEL HEMPSTEAD INFIRMARY.

To the Editor of THE LANCET.

SIR,—I venture to ask leave to state that the Workhouse Nursing Association sent upon Feb. 22nd a further letter to the Local Government Board in answer to our memorial, a copy of which was published presumably by the guardians. In this further letter we explained various facts in the case, which the Board seem to have ignored and again pressed for a full inquiry. On March 4th we received an absolute refusal from the assistant secretary for any further inquiry or investigation; no reasons were given. We think it only right that the public should be in possession of these facts regarding a case of wide interest and great public importance. The correspondence is open to the inspection of the press, and of all interested in the subject of union infirmary management.

I am, Sir, yours faithfully,

March 17th, 1910. R. V. GILL, Secretary.

THE PUBLIC HEALTH AND THE PARIS FLOODS.

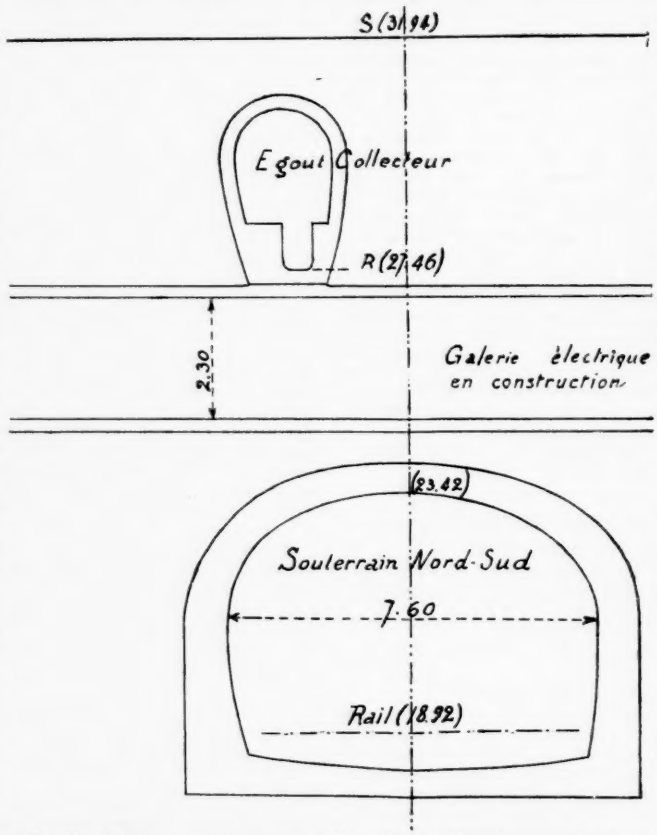
(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Paris, March 12th.

WITH the solitary exception of one sewer in the Rue Richepanse the sewers of Paris withstood successfully the enormous pressure put upon them during the recent floods. Now that the waters have subsided it is possible to see what has really happened. The Paris sewers measure in length about 700 miles. They cost £6,000,000 to build, and the quality of work done on so vast a scale has just been rudely tested. The sewers for the most part are made of masonry. A rough granulated and somewhat porous yet durable stone found in the neighbourhood of Paris has been generally used for this purpose. It is cemented, and the lower part of the sewers are or are supposed to be watertight, but the upper portions very often are not. Water oozes through the roofs and thus the sewers serve to drain the surrounding subsoil and keep it dry. But the culverts or lower channels of many of the sewers are now very much worn and in need of repairs. If some of these had burst it would scarcely have surprised anyone. As a matter of fact, even the one sewer known to have burst, that of the Rue Richepanse, did not do so in consequence of any inherent weakness. It appears that at the corner of the Rue St. Honoré and the Rue Richepanse there had until recently stood a house that was more than 300 years old. So dilapidated had it become that in the lease made out for the last tenant a clause was inserted by which the occupier undertook not to allow anyone to dance in the house for fear it should collapse. This old dwelling was pulled down and the construction of a new building was preceded by some deep digging in order to lay foundations and construct cellars. On each side of the Seine the soil is alluvial and porous, and as the water rises in the river so does it tend to rise in the subsoil of the low-lying quarters of Paris. During the recent floods all this porous soil was inundated and the level of the subsoil water rose and fell with the river, though it maintained a lower level. Thus when the water reached the level of 33·45 metres above the sea in the river at the Pont de la Concorde it was at 31·95 metres in the subsoil of the Place de la Concorde. The level of the adjoining Rue Richepanse is 31·94 metres above the sea. Consequently the subsoil waters in the Place de la Concorde rose above the level of the sewers in the Rue Richepanse and the Rue St. Honoré. The small amount of earth which separated these sewers from the pit caused by the deep digging necessitated by building the new house at this corner was soon saturated and disintegrated. Thereupon the whole side of the street fell into what will be the cellars and foundations of the house in course of construction. Thus laid bare and deprived of any sort of support, the walls of both sewers gave way and also fell into the cellar space. The accident may therefore be described rather as a land slide than as the bursting of sewers.

But there was another source of weakness at this particular spot. Passing along the Rue St. Honoré, immediately under the two sewers that meet at the angle of the Rue Richepanse and the Rue St. Honoré, is a gallery in course of construction. It measures 2·30 metres, or more than 7 feet in height, and is meant to prevent the overcrowding of the sewer with electric wires of all sorts. As this gallery is not intended to hold water or undergo any particular pressure, it is not as solidly built as the sewers, and therefore it readily gave way. The accompanying plan shows the arrangement. Still further down comes the Nord-Sud Underground Railway, which passes all along the Rue St. Florentin from the Place de la Concorde and the Rue Richepanse on to the Place de la Madeleine. The roof of this tube railway is 3·20 metres below the sewer, but in this space passes the electric gallery, which is 2·30 high, so that these three underground passages nearly touch each other. The roof of the railway tunnel is 23·42 metres and the rails 18·92 metres above the sea level. The water in the surrounding subsoil rose to close upon 32 metres above the sea level. No wonder, therefore, that the tube tunnelling was absolutely full of water and that the water surged up the steps of various stations, overflowing notably at the Place du Havre, in front of the St. Lazare station. What a picture this gives of the underground life of a great city and the new

dangers such an existence has brought into being. Here are two thoroughfares crossing each other at right angles, each with a large sewer but a few feet under the level of the street. Below, at a greater distance, is the railway; but taking up nearly the whole of the space between the two passes a large lightly built gallery for electric wires. To dig deep down close to all this underground tunnelling must be more or less risky, and though probably nothing would have happened if the flood had not invaded the subsoil, the fact remains that the position must be a dangerous one. Even now at any unsuspected shock the sewer might open into the gallery below, and so into the railway still lower down. When the Rue Richepanse sewer burst the water mains had to be stopped at a considerable distance from the accident and all the houses in the intervening space found themselves suddenly deprived of drinking water. This was preferable to receiving water mixed with sewage, but was nevertheless inconvenient and even perilous. The authorities, recognising this, very promptly arrived with lead-piping which they laid down on the side walk close against the walls of the houses. Through cellar windows or doors smaller branch pipes were introduced, then the whole was connected with the nearest fire hydrant. Thus in a short time the houses had a water-supply again. These temporary lead-pipes are in the streets now, cause no inconvenience whatsoever, and show how water can quickly be brought to houses after the ordinary water mains have been broken. But if other sewers in the same neighbourhood had also come to grief, and other water mains had been destroyed, it would not have been so easy to promptly repair the mischief.



The above diagram represents a section of the underground arrangements where the Rue St. Honoré crosses at right angles the Rue Richepanse continued beyond the crossing as the Rue St. Florentin. The surface of the Rue Richepanse is 31·94 metres above sea level. Below is the main sewer showing the culvert, R.27·46 metres above sea level. Beneath is the gallery for electric mains in course of construction below the Rue St. Honoré. Below this gallery, and at right angles to it, following the Rue Richepanse and the Rue St. Florentin, runs the Nord-Sud underground railway.

To prevent accidents in streets or in houses there is a service which is more elaborate than that of the borough surveyors in England. This is the *Service de Voirie*, from the Latin *viarius*, that which concerns streets. The chief of this department in Paris is M. Bonnier, Architecte Voyer en Chef. Under his direction there is a large staff of architects. The 20 arrondissements into which Paris is divided have each in their employ several architects, who are held responsible for the district placed under their care. They constitute a sort of police of construction. They examine the plans of all new buildings for the department, and see that these are in keeping with the laws of the land and local regulations, and inspect and report constantly on the state of the streets and the buildings, every such "architect-inspector" being familiar with the problems of drainage, ventilation, heating, and so on. During the floods this department was naturally overwhelmed with work. Consequently all the *architectes voyers* were drawn off from the districts that had escaped from the floods so that they might assist their colleagues in the afflicted parts of Paris. They inspected all the houses, primarily to see if they were safe, to see if the walls or foundations were giving way under the influence of the water. Then they prescribed to the landlord what had to be done. They also distributed the circulars issued by the health authorities indicating how inundated premises should be cleansed and disinfected. Thus they powerfully seconded the efforts of Dr. Henry Thierry and the Technical Disinfecting Services of the Prefecture of the Seine.[1] The architects visited the cellars of the houses to see if the walls were giving way, but they also reported if they had been properly cleaned. If this had not been done satisfactorily, then the disinfecting department sent its men and they did the work themselves when there was any difficulty in getting it done by the landlord. But, as already stated, there was usually the greatest zeal displayed by all concerned, and every one was anxious to do whatever was said to be necessary. The architect inspectors also organised the plank bridging of the flooded streets so that the inhabitants were able to reach their houses and enter by the windows, if not by the doors. For these constructions the architects employed many of the men who had been thrown out of work by the flooding of the underground railway. If more accidents have not happened this immunity may in a measure be attributed to this excellent service. The peculiarities and history of every building in Paris are familiar to the *architecte voyer* of the district. Therefore, when the floods came there was at least one public functionary on the spot who knew which buildings were most likely to suffer and would be least able to resist the effects of the waters. These buildings were at once propped up and prevented from falling in the street. Thus no very serious accident has happened. In this manner has the security of the inhabitants of Paris been guarded, while the architects have also helped to preserve the health of the people by assisting the disinfecting department.

[1] See THE LANCET, March 12th, p. 754.

THE HARVEIAN LECTURE.—At a meeting of the Harveian Society on March 17th Dr. M. Handfield-Jones, the President, being in the chair, the Harveian lecture, "Remarks on Hydrocephalus," was given by Dr. Leonard Guthrie. The lecturer gave an interesting and exhaustive account of the subject, illustrated by slides and post-mortem specimens, and accompanied by numerous references and illustrative cases.

CHOLERA AND PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE following figures are in continuation of those published in my last letter (THE LANCET, Feb. 5th, p. 399):—

Between	Nov.	29th	and	Dec.	5th	...	144	cases,	77	deaths.
,,	Dec.	6th	,,	,,	12th	...	100	,,	38	,,
,,	,,	13th	,,	,,	19th	...	33	,,	15	,,
,,	,,	20th	,,	,,	26th	...	24	,,	5	,,
,,	,,	27th	,,	Jan.	2nd	...	6	,,	3	,,
(,,	Jan.	3rd	,,	,,	9th	...	0	,,	3	,,)
(,,	,,	10th	,,	,,	16th	...	1	,,	2	,,)
(,,	,,	17th	,,	,,	23rd	...	0	,,	0	,,)

(All the above dates are according to the Old Style.)

The figures for the last three weeks in the above table are uncorrected and therefore appear in parentheses. It seems, however, certain that during the last three weeks the whole of Russia has, so far as is known, been quite free from cholera. It will be interesting to observe how long it remains so. Last year, it will be recalled, the epidemic did not die down until much later—in the spring, in fact; and the cholera-free interval was of very short duration, not more than a few weeks at the outside. Of the figures for the last three weeks in the above table, the three deaths in the week ending Jan. 9th occurred in Moscow; and the single case and two deaths in the following week in the Territory of the Don. The total number of cholera cases in the whole of Russia from the beginning of last year's epidemic down to Jan. 9th (22nd) is put at 20,646 and that of deaths at 9378.

The Serum Treatment of Cholera in Children.

Dr. Klibanskaia publishes in the *Vratch* (No. 1, Jan. 2–15th, 1910) an article on this subject. The conclusions that this lady doctor draws from her experiments in a children's hospital in St. Petersburg are the following: (1) the serum treatment of cholera in children markedly lowers the mortality, provided that the serum is injected into the veins, together with physiological salt solution, and that the treatment be begun not later than 12 hours after the appearance of symptoms; (2) hypodermic injection of the serum has no effect; and (3) in the "typhoid" state the serum is also useless. The intravenous injection of salt solution is essential in employing the serum treatment of cholera in children.

Plague in the Kirghiz Steppes.

These endemic centres of plague are still active. The following is a summary of the information recently published on the subject either in the Russian medical press or in communications made to the Board of Health in Constantinople by the Russian delegate. According to a telegram dated Dec. 14th (27th) there were then four centres of infection in the Uralsk province. In the first, situated at Tiumen, 90 *zemlianki* (half underground earth huts) were surrounded by a cordon; the disease there was lessening. In the second, near the Djambentin Bazâr, the cordon had been removed. In the third there had been no fresh cases. In the fourth the disease was limited to a place called Kankul, in the Abshtchensk *uyezd*. In the whole infected area there were registered on Dec. 11th (24th) 11 cases and 9 deaths; on the 12th (25th), 3 cases and 15 deaths. On the 13th (26th) 4 cases remained under treatment. A telegram dated Dec. 20th (Jan. 2nd) stated that pneumonic plague had appeared in the *urotchiahtché* (Kirghiz settlement) of Akbalyk, in the Inner Kirghiz Horde, in the Astrakhan government, and that 8 cases with 3 deaths had been observed. A special correspondent of the *Russkoe Slovo* (quoted in the *Vratch*), who was sent to the infected area, reported on Dec. 23rd (Jan. 5th), that the beginning of the outbreak of plague in the Kirghiz steppes dates back to Nov. 12th (25th); that the Governor was only informed on Nov. 30th (Dec. 13th); that a medical officer was then sent to the infected districts; that he visited 21 *zemlianki*; that he found plague cases in 14; that in these huts he found 15 persons sick with plague, and 10 décomposing corpses, which had been lying there for about two weeks; that in all the plague centres in the Uralsk province down to Dec. 22nd (Jan. 4th) 189 cases of plague with 178 deaths had occurred. It is added that a third plague centre had developed at a point situated in the Astrakhan government, adjoining the Uralsk province; and that down to Dec. 22nd (Jan. 4th) 16 deaths had occurred at the above-named Akbalyk. A telegram from Astrakhan, dated Jan. 13th (26th), stated that suspected plague cases had been seen in another centre in the Kirghiz steppes, and that there had been 3 cases, all fatal. The telegram adds that the attacks only lasted a single day. The Government Gazette (*Official Messenger*) of Jan. 10th (23rd), however, stated that the government of Astrakhan and the Uralsk province had been officially declared free from plague. Finally, the same Gazette on Jan. 15th (28th) reported the discovery of a fresh centre of the disease in the camp of Naour-zali-Tchagil, situated in the Kirghiz steppes of the Astrakhan government, and stated that down to Jan. 12th (25th) 13 cases of plague had been observed here, with 11 deaths. On Jan. 24th (Feb. 6th) the same Gazette stated that in this new centre 13 fresh cases of the disease and 15 deaths had occurred between Jan. 13th (26th) and 20th (Feb. 2nd). Since the beginning of the outbreak 26 cases, all fatal, had been seen, and at the date of the telegram no cases remained under treatment. It may be noted that soon after the appearance of plague in these regions four medical men were sent from St. Petersburg to the Kirghiz steppes with a supply of plague serum, and with instructions to organise the measures needed to stamp out the infection. It is significantly added that "the conditions under which the doctors have to work in the Kirghiz steppes at this moment are exceptionally trying."

Plague in Jeddah.

It will be recalled that a case of plague was reported from Jeddah on Jan. 8th, and that the patient died on the 10th. On the 14th of the same month a second case was seen; the patient was already dead; he was an Indian, a native of Jeddah. On the 16th 1 death was reported, on the 19th 1 case, and finally on Feb. 3rd 1 death. Since then no further cases have been reported. It will be fortunate if this year's outbreak of plague in Jeddah should be limited to these 5 cases with 4 deaths. The suspected case landed in the lazaret of El Tor, of which mention was made in my last letter, proved not to be a case of plague.

The Returning Haj.

The pilgrimage season of 1909–10 (1327 of the Hegira) is now drawing to an end, and the bulk of the pilgrims have already left the Hedjaz. No case of cholera or plague has been seen among them. The Haj having been declared "infected" ("*brut*"), on account of the few cases of plague in Jeddah, severe measures have been applied to the pilgrims by whatever route they may have chosen to return. The question naturally arises, Is it really necessary or logical to apply these severe measures in the case of a pilgrimage such as the present, when a few sporadic cases of plague have been seen in the sole town of Jeddah, measures of just the same severity as would be applied if cholera were raging at Jeddah, Mecca, Medina, and throughout the Hedjaz? Yet such is the present practice as required by the International Conventions.

The Tebuk Lazaret on the Hedjaz Railway.

So far as may be judged at present the number of pilgrims returning from the Hedjaz by the new railway will prove to be this year about the same as in last year's pilgrimage. The completed figures for that year show that 14,126 pilgrims passed through the improvised lazaret at Tebuk. It is of interest to note the nationality of these pilgrims, as indicated by the following:—Indians, 136; Chinese, 55; Afghans, 53; Hedjazis, 434; Bokhariots, 2479; Bosniacs, 157; Herzegovinians, 5; Persians, 1202; from Tripoli (Africa), 345; Russians, 1335; Egyptians, 796; Algerians and Tunisians, 735; Moroccans, 309; from Irak Arabi (Mesopotamia), 321; Syrians, 3026; Anatoliotes (Asia Minor), 2101; Rumeliotes (Turkey in Europe), 492 Albanians, 37; Moroccan Dervishes, 37; (Italian labourers on the railway, 17); others, 21; total, 14,126. Though last year's lazaret at Tebuk was regarded as a provisional establishment it presented many of the characters of a permanent one. Ten "cordons" were provided for as many groups of pilgrims, and each was surrounded with an iron wire fencing of a substantial nature. A complete

system of water pipes was laid down, bringing water from the station well and distributing it to each cordon. In the cordons the pilgrims were lodged in tents, and this will probably be the case until the question of constructing the permanent lazaret is taken in hand. A single disinfecting pavilion was in use, containing two large disinfecting stoves; it consists of a wooden building of the so-called "portable" type, furnished by a French firm, who make a specialty of such "pavillons démontables." A similar building served to lodge the principal members of the staff, and a second one for the same purpose has been put up for the present pilgrimage. The latrine arrangements are of necessity for the present of an improvised character; they consist of small wooden huts, covered with corrugated iron, each containing five latrines; the excreta are received in pits in the ground, and as soon as these are filled the hut is removed to another spot. The same system was until recently in use at the lazaret of El Tor. For the present Haj two additional "portable" buildings have been put up, besides those already referred to, one to serve as a store-room (depôt), the other as a hospital. Some £T.8000 have been spent in constructions and laying down the water-supply alone.

Constantinople, Feb. 24th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Vaccination in Bristol.

DURING 1908 8636 births were registered in Bristol. Of this number 4649 were successfully vaccinated, 40 were insusceptible, 1052 had conscientious exemption certificates, 820 died unvaccinated, 166 were medically postponed, 175 removed from the district, 770 removed to unknown places, and 964 were unaccounted for. During 1908, as above stated, 1052 "exemptions" were granted. In the first six months of 1909 620 were given. In 1909 the total number of certificates of successful primary vaccination received by the vaccination officers of the Bristol union amounted to 5377, and the certificates of conscientious objections, irrespective of the dates of birth of the children to which they relate, which were received by them during the year were 1331.

Bristol General Hospital.

The annual report of this institution was presented on March 14th at the half-yearly meeting of governors. The work of the hospital was greater last year than in any previous year; there were 2700 in-patients and 39,522 out-patients, with 5867 dental out-patients. The average daily percentage of occupied beds was 91·4, the average stay of each in-patient being 24·7 days. The maternity cases numbered 344. The total ordinary income (including refunded income-tax) amounted to £10,905; to this are added legacies amounting to £4482 and special donations of £2500 towards debt reduction. The total expenditure was £14,529, a reduction of £450 on 1908. The result is that the balance due to the treasurer, which was £4361 at the beginning of 1909, is now standing at £2937. The Lord Mayor, who presided, paid a tribute to the high standard of efficiency maintained in all departments of the hospital, and the sheriff also spoke. Mr. Herbert Baker, the chairman of the hospital committee, appealed to the public for an increase in the list of regular subscribers.

Bristol Royal Hospital for Sick Children and Women.

The annual meeting of the subscribers to this institution was held on March 1st under the presidency of the Lord Mayor. The medical report stated that during 1909 754 children and 60 women had been treated as in-patients, and 3512 children and 1491 women had been attended to in the out-patient department. 65 children had been sent to the convalescent home at Weston-super-Mare, which is in connexion with the charity. The financial statement showed that the income amounted to £4559 and the expenditure to £4719.

The Health of Taunton.

Dr. H. J. Alford, the medical officer of health of Taunton, in his annual report for 1909 states that the estimated population of the town is 22,245 and the area in statute acres 1438. The birth-rate per 1000 was 20·9. The death-rate was 15, but the corrected death-rate only 13·8 per 1000. The zymotic death-rate was 0·98 and the infantile mortality per 1000 births 111·5. The death-rate, zymotic death-rate, and infantile mortality were all below the average. Dr. Alford adds that the adoption of the Notification of Births Act had been of immense value in checking infantile mortality. He mentions that an outbreak of enteric fever occurred in October, which was traced to the milk-supply, and emphasises the danger from flies coming into contact with milk.

Cheltenham General Hospital and Dispensary.

The annual report of the Cheltenham General Hospital, which has just been issued, states that during 1909 the in-patients numbered 1016, a decrease of 24 compared with 1908. 4167 out-patients were treated, against 4123 in the previous year. At the branch dispensary in connexion with the institution 2293 patients were treated, a decrease of 473 compared with the preceding 12 months. The total income, exclusive of legacies £1422, was £4413. The expenditure amounted to £6952. The Hospital Sunday and Saturday collections showed a considerable falling off. Last month Lord St. Aldwyn formally opened the extension which has recently been made to the hospital. The enlargement provides accommodation for an additional 32 beds, bringing the number of beds in the institution up to 114. The cost of the undertaking has been £4800, of which £3750 have been subscribed in response to a public appeal for funds.

March 21st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Hospital for Sick Children, Edinburgh.

THIS admirable institution continues to do excellent work for the sick children of Edinburgh and yet the directors find it necessary to appeal for the funds required for its maintenance. The number of cases treated during the year was 2112. The ordinary income was £2431 less than the ordinary expenditure, but special donations and legacies saved the board from immediate financial anxiety. The sum obtained from church collections during the year only amounted to £24 8*s.* 10*d.* The convalescent home at Gullane was opened in June last, but it required from £800 to £1000 to run it. Lord MacKenzie, in speaking to the report at the annual meeting, referred to the influence on a child's mind of being in hospital—it was in many instances the opening up a new world and tended to bring out the good qualities of the child. He also spoke of the benefit that might be expected to follow upon the appointment by the directors of a lady visitor who would give the mothers help in regard to the treatment to be carried out in the child's own home. The chairman of the Chamber of Commerce also spoke of the need of wider interest being taken in the hospital. He referred to the reduction in the number of babies under one year that had been admitted and thought it was probably to be explained by the admirable system of lady health visitors that had been at work in the city for some time now.

Farm Colony for the Royal Victoria Hospital for Consumption, Edinburgh.

The authorities of the Royal Victoria Hospital for Consumption have acquired the mansion house of Springfield, near Polton, and 50 acres of ground for the purpose of a working farm colony in connexion with the hospital.

Partick Medical Society and Friendly Societies.

A resolution has been drawn up by the above medical society that "No new societies be taken by medical men in their district at a lower sum than 4*s.* per annum, and that all societies changing their medical officer be asked to conform to this scale." This does not involve a payment of 1*d.* a week per member, but the societies are unwilling to raise their contribution on the ground that it handicaps them in competition with those of neighbouring districts. Neighbouring medical societies have therefore been approached on the subject, and it is hoped that similar action will soon be taken throughout the Glasgow district.

Sidlaw Sanatorium: Transference Agreed to.

A meeting of the donors and annual subscribers to this sanatorium was held on March 17th, when it was decided to give the executive committee power to promote legislation to complete the transference. It was explained that only the

income derived from the endowment fund, not the capital of the fund, would be drawn upon for expenses of transfer.

Aberdeen Dispensary: Annual Meeting.

The annual meeting of the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution was held recently in the Aberdeen town hall. The annual report showed that during the past year there had been treated at the dispensary nearly 14,000 cases, and 53,000 prescriptions had been dispensed. The financial statement showed a total deficit for the past year of £1161. This unfavourable condition of the finances led to considerable discussion. Various suggestions were offered with the view of bringing about an improved state of affairs. It was remitted to the committee of management to consider the advisability of promoting a bazaar at the end of the year in aid of the funds; also to consider the question of making a small charge towards the institution from all applicants for assistance.

March 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Diet in Diseases of the Kidneys.

AT a meeting of the Academy of Medicine held on March 1st a communication on the subject of diet in diseases of the kidneys was made by M. Linossier and M. Lemoine. Experiments carried out by them showed that all albuminoid substances of animal origin if injected under the skin gave rise to albuminuria and renal lesions. The explanation of the harmlessness of these substances when taken as ordinary articles of food was that their toxicity was destroyed when they were disintegrated by the gastric juice, but the toxic properties would become manifest if from any cause there was impairment of the digestive or renal functions. Patients suffering from diseases of the kidney should therefore avoid the use of albuminoid substances of animal origin unless well cooked. Meat ought never to be underdone; beef had a toxic action when insufficiently cooked; veal was preferable to beef, because it was always thoroughly cooked. In cooking eggs the white ought always to be coagulated. Uncooked milk might cause kidney trouble if it was imperfectly digested, and when patients suffering from albuminuria were placed on milk diet the milk ought to be boiled, especially if their stomachs were out of order.

Hospital Accommodation and Hygiene in the Navy.

The Under Secretary of State for the Navy has recently approved a recommendation which the Superior Commission of Naval Hygiene has made in reference to hospital accommodation on board ships of war. This new regulation, which will apply to vessels built in the year 1910 and subsequently, defines the number and position of the places to be appropriated for hospital purposes, and makes full provision for the the performance of major operations. Full directions are laid down for the accommodation and conveyance of the wounded. Systematic instruction in hygiene is also to be given. In particular, at the Naval School instruction will be given not only in hygiene but in such details of first-aid as might be useful to an officer of a submarine, a torpedo-boat, or other vessel manned by a small crew and therefore not carrying a surgeon. This instruction will have some influence on the examinations.

A Free Course of Surgical Anatomy at the Faculty of Medicine.

A free course of surgical anatomy is announced to be given in the large theatre of the Faculty of Medicine of Paris by M. Doyen, starting on April 18th. The lectures will be delivered daily for 15 days, Sundays excepted, between 6 and 7 o'clock in the evening. M. Doyen intends to demonstrate the advantage of the anatomical method which he has worked out to establish his principles of operative surgery.

A Centenarian Doctor.

The hundredth anniversary of the birthday of M. Jean Charles Boullé, described by some of the Paris journals as the *doyen* of French medical practitioners, has just been celebrated at Saint Valérien, near Sens. The proceedings consisted of the presentation of an address by the municipality, the mayor, accompanied by all the municipal bodies, waiting upon the venerable physician at his residence, the exterior of which was decorated in honour of the event. Afterwards all the school children of the district waited upon Dr. Boullé, who, after receiving them, entertained them at dinner at the *mairie*. A banquet was also given, at which the under Prefect, M. Blachon, presided, covers being laid for 150 guests. The Minister of Instruction was represented and the local Parliamentary representatives were present. The usual speeches followed, and it was announced that the Academy of Medicine had appointed Dr. Boullé an officer. The doctor, who has an *aspect chétif*, is still alert and erect, with a long white beard. Replying to the congratulations of the company, Dr. Boullé became reminiscent. "My father and my grandfather," he said, "were in practice in this district before me; in other words, the sick of the neighbourhood since 1750 have been under the care of my family. In my father's time we led the life of peasants, living more on potatoes than joints of meat. My father when he was not attending to the sick cultivated his land. In this modest way he reared six children, all of whom, I am proud to say, did well. My first preceptor in medicine was Dr. Retif of Sens. In the autumn of 1828 I went to Paris to complete my studies. I lived in the Latin quarter and paid 5 francs a month for a bedroom and study. I was in Paris during the troubles of 1830 but I took no side. After 1848 I was elected Republican mayor of Saint Valérien. In 1851 I protested against the *coup d'état*. I escaped arrest, for my adversaries interceded for me. I saw '70. Prussian soldiers occupied this place. It was a sad time." It was only two years ago that this veteran took an active part in saving his books and papers when his house was on fire. He attributes his health and longevity to eating and drinking with moderation, to the pure air of Burgundy, and to the active life which he has led. His youngest son, a doctor of medicine, 67 years of age, was present at the banquet. Dr. Boullé later presided at a ball given in his honour.

March 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Feeding of School Children.

Dr. Bernhardt, a medical officer to the Berlin municipal schools, has carried out an investigation into the feeding of children of some schools in the centre of Berlin. The investigation was continued for four years, and included 8451 children. He found that 6·8 per cent. of the children came to school without breakfast. In the majority of cases this was due to negligence or drunkenness of the mother. Many children received only black coffee or dry bread; in one case, that of a boy aged 7 years, the breakfast consisted of a mineral water. In the minority of cases only the parents were too poor to procure breakfast. This was the case in a girl, 12 years of age, who not only had to cook for her father and her brothers and sisters and to look after their dwelling, but also did the work of her sick mother as a charwoman. The girl worked from 5 o'clock in the morning till nearly midnight, and it was her uncontrollable sleepiness during lesson hours that drew the attention of the teacher to her domestic conditions. It was found also that some hundred children got their dinner between 6 and 8 o'clock in the evening, six of them between 8 and 9, and seven between 9 and 10. During the day the children received coffee and bread-and-butter. In a very few cases there was no dinner at all, but only coffee, bread, and potatoes were given. Dr. Bernhardt recommended that breakfast should be given on behalf of the school on a larger scale than had hitherto been the case, and that the school should begin at a later hour to allow the children longer time for sleep.

A Remedy for Sea-sickness.

Dr. Pauly, a medical officer to the Hamburg-America Line, has recommended veronal-sodium as a remedy for sea-sickness. Veronal alone has been used on a large scale by Dr. Schepelmann, of the same line, and the results were good, but the drawback is that it is not freely soluble in water, so that a great quantity of fluid has to be swallowed for an efficient dose. Moreover, the veronal is absorbed by the gastro-intestinal canal in alkaline form, only being converted into that form by the alkalising properties of the intestines. Practical experience

shows that it is best to administer the compound in an alkaline form. Dr. Pauly has cured 50 cases, one being that of a lady who had travelled for the seventh time from America to Europe and had always suffered severely from sea-sickness. She began with a dose of 0·5 gramme, taking 0·25 gramme four hours later and repeating the latter dose twice for the next two days. She was quite well during the journey and was able to participate at the meals. Dr. Pauly recommended the prescribing of 0·25 to 0·5 gramme for an initial dose, which sometimes sufficed to produce the desired effect. In cases where the condition was already established 0·25 gramme was given three or four times a day and only in a few very severe cases six times a day. No undesirable symptoms ever appeared—the patients complained only of a certain amount of lassitude. Vomiting was prevented in all but two cases. The compound was administered in the form of tablets dissolved in water. The patients after a few doses were able to take and to retain food.

Nervous Emaciation.

At a meeting of this society Professor Holländer showed a girl who after a sudden fright underwent a progressive atrophy of the subcutaneous fat. The face, the neck, the trunk, and the arms were totally deprived of fat; the complexion was death-like; the action of the muscles was completely visible through the skin. In marked contrast there was a diffuse lipomatosis on the femur and on the nates. The patient felt quite well, but her appearance was so distressing that she declined to leave her home in daylight. Examination of the nervous system revealed nothing except a rotatory nystagmus. Notwithstanding a special diet for years no improvement was obtained, and Professor Holländer accordingly tried to improve the face by injections of human fat. The fat was liquefied at a temperature of 37° C. and then ten syringefuls were injected. The complexion became normal after the injection, but unfortunately after two months the fat was nearly totally absorbed. A mixture of human fat and mutton suet was accordingly injected, which proved to be more consistent, so that a fairly good result was obtained.

Congress of the German Surgical Society.

The thirty-ninth Congress of the German Surgical Society will be held in Berlin from March 30th to April 2nd. Several particulars of this were announced in THE LANCET of Feb. 12th, p. 469. A second circular relating to the congress has now been issued by Dr. Bier, the president, which gives the titles of the 129 papers which have been entered for the agenda, so that members may be advised of the subjects proposed to be brought forward and prepared for their discussion. According to the rules only 70 papers should be announced on the programme, but many will no doubt be withdrawn before the final programme is issued and used instead as bases for discussion in connexion with other leading papers. The chief papers to be laid before the congress will be: on the first day, "The Surgical Treatment of Epilepsy," by Dr. Krause and Dr. Tilmann; on the second day, "The Surgical Treatment of Stenosis and Rigid Dilatation of the Thorax," by Dr. Freund and Dr. Mohr; and on the third day, "The Surgical Treatment of Acute Appendicitis," by Dr. Kümmell and Dr. Sonnenburg.

March 21st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Baron Garofalo on the Latin and Teutonic Races.

No one speaks with more authority in Italy, or even in Europe, on ethnological distinctions than the Senator Baron Raffaelle Garofalo, sometime professor of criminology in the University of Naples, now head of the Administration of Justice at Venice. Lecturing in Milan the other day to a distinguished audience—his theme "The Latin and the Anglo-Saxon Civilisation"—he read his compatriots a severe, if salutary, lesson on their defects, moral and intellectual, defects which are but feebly made good by the education which in Italy contrasts so unfavourably with that enjoyed by the British or North American youth. He dwelt on the emotional susceptibility of the Latin, particularly the Italian, subject, so easily swayed by appeals to the passions, so wanting in respect to legal authority, so deficient in that "sense of citizenship" which controls political, even municipal, movement in the British Isles. "What you want," said Garibaldi some 30 years ago to an audience of modern Romans, "is the English steadiness," the power of "thinking twice" before acting on a seductive theory and committing one's self to the "popularis aura," heedless of the direction in which it blows. "Ill-inspired enthusiasm," Baron Garofalo maintained, is responsible for the ineffectiveness of public life in the Italian, as in the cognate races, and in illustration of this he showed the evil consequences of recent legislation, conceding privileges and indulgences to a proletariat not educated enough to appreciate them or turn them to wholesome account. The "riposo festivo," for instance, or Italy's new equivalent to the "day of rest" traditional in the British Isles, he denounced as a premature concession to the masses, with whom it had come to mean only another opportunity for dissipation, to the advantage of the liquor trade and the purveyors of more than questionable forms of entertainment, issuing in the increase of that new curse of Italy, alcoholism, and of that old, old sin of the Latin races, premature sexual indulgence. The lecture, as reported in the daily press, has evoked from radical and moderate parties alike a cordial welcome, reinforcing, as it cannot fail to do, the educational reforms which, beginning with the family, will gradually leaven the municipal and civic life, and after this the nation as a whole.

"La Donna Fatale."

The twentieth century, not yet in its teens, has been strangely prolific in *causes célèbres* in the New World as in the Old, on the north as on the south side of the Alps. Italy especially has contributed to the catalogue of these, her Palizzolo, Musolino, and Murri trials having thrown into the shade even those in her sister France—the Humbert and the Steinheil "dramas" included." Even the three former, however, seem likely to be eclipsed by the "processo" now uncoiling itself at Venice, in which, it is fair to say, the protagonists are not Italian but Slav, the "heroine" indeed being of Irish extraction, though of continental upbringing. She is at present the "donna fatale" of Italian medico-psychologists, an unusually large number of whom have been retained by the prosecution and the defence alike, and whose evidence evoked and checked under cross-examination by forensic criminologists is awaited with the keenest interest by the public and particularly by the profession. Dr. Enrico Morselli, professor of psychiatry in the University of Genoa, is only one out of a long list of experts hardly less authoritative in this most fascinating, if debateable, department of medicine, and their intervention as witnesses will invest with a scientific value the unfolding of a trial exceptionally rich in dramatic situation and in what Carlyle called "diseased developments."

March 16th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Hygienic and Sanitary Measures.

THE council of the municipality of Constantinople has been considering certain necessary hygienic and sanitary measures to be adopted in order to improve the conditions of public health of the city. Thus it has been decided to submit to the Ministry of Evkaf (i.e., the body having charge of "pious foundations") the urgent advisability of forming a commission, whose office would be to elaborate rules and regulations for the satisfactory carrying out of the principles of sanitation in mosques, *medressés* (theological seminaries), and other religious establishments. The total neglect of the cemeteries scattered over the city has also received attention by the municipality, as well as the manner in which a proper census of the population should be taken. Another measure that will prove of great benefit to public health is one whereby pharmacists have been forbidden to sell any poisonous substance without a prescription from a medical practitioner.

A Proposed Greek Hospital for Pera.

The late Greek philanthropists Nicolas and Helene Zarifi left a legacy of 2,500,000 francs to be used for charitable purposes among the Greek elements of the population of the Ottoman metropolis. It seems that no definite stipulation

was left as to how the money should be used. The other day a meeting consisting exclusively of Greek medical men was held in the *Syllogos* to discuss the possibility of building a Greek hospital in Pera. It has been decided, so I am informed, to submit to the Greek Patriarch, the Hellenic Government, and the heirs of the Zarifi family that there is a great need of a Greek hospital in Pera and that the sum in question could be very appropriately used for the erection of such a charitable establishment.

Professor Dr. Hikmet Bey.

In consequence of the considerable retrenchments in the Budget made by the former Minister of Public Instruction, Dr. Hikmet Bey, who was acting as professor of anatomy in the medical school of Haidar Pasha, was dismissed from his post, and being a military medical man was attached to the fifth battalion at Yildiz with a very inadequate salary. This case is remarkable as illustrating one of the many cases in which military physicians have to suffer under some dissatisfactory aspects of the new *régime*. Dr. Hickmet Bey's lot, however, turned out to be much happier than that of many others of his *confrères*. The students of the medical school submitted a petition to the present Minister of Public Instruction requesting that Hikmet Bey, an excellent as well as a popular teacher, should again be seated in the chair of anatomy, and the request of the students has now been granted, the necessary provision for stipend being made in the new Budget.

Leprosy among the Students of the Naval School.

The Turkish newspaper *Ikdam* states that several students of the Naval School at Halki (an island in the Ismid Gulf of Marmora) are suffering from leprosy. The attention of the responsible authorities is being drawn to the necessity of isolating the patients.

Cerebro-spinal Meningitis in Jerusalem.

A somewhat alarming epidemic of cerebro-spinal meningitis is reported from Jerusalem. Up to now as many as 75 cases have been recorded. It is thought that there must be many more cases which escape the notice of the medical authorities, as the population is ignorant of the disease and seldom thinks it necessary to apply strict measures. A peculiar characteristic of this epidemic is that its attacks, as reported, have been limited almost exclusively to the Jews. The reason is believed to be their poverty as well as their lack of knowledge of the most elementary principles of hygiene. They live with their usually big families in one small room, and the sanitary conditions of their houses and courts are deplorable. The streets are frequently encumbered by refuse that remains lying in them for days. The municipal authorities of Jerusalem are not enterprising and the water and drainage system of the city are stated to be extremely bad. The suggestion that only the Jewish population is ignorant and dirty is very one-sided.

March 12th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Conference of the Hook-Worm Disease (Uncinariasis) Commission.

THE commission created by the generosity of Mr. Rockefeller for the purpose of studying the "hook-worm disease" of the Southern States and reporting measures of prevention has met at its first session at Atlanta, Georgia, under the auspices of the Georgia State Board of Health in conference with delegates from 18 States. The number in attendance was 500, and the proceedings show that a deep interest was taken in the work of the commission. Papers were read on the "History and Zoologic Aspect of the Hook-Worm Disease"; "The Symptoms of Uncinariasis"; "The Pathology of Uncinariasis"; "The Treatment of Hook-Worm Disease"; "Educational Campaign Against Hook-Worm in Texas"; and "The Excessive Waste of American Life and How Life Insurance Companies could Assist in Checking It." The discussion on these and kindred subjects was earnest and practical in the highest degree and gave positive assurance that the remarkable act of private benevolence on the part of the donor in endowing the commission with $1,000,000 is to become of even more than national importance. Some of the facts relating to the disease which were established by this conference are of general interest. It appeared that the disease was more widely disseminated than was heretofore known. Cases were reported from extreme parts of the country, but they were always traceable to carriers of infection from the States populated by the negro, who originally brought the germ from Africa. The infection is heaviest and greatest along the sand area; the next heaviest infection occurs in the Appalachian region; in general the clay-land region is less infected. It was suggested that no known disease is more easily diagnosed, more easily cured, and more easily prevented.

Suits for Malpractice in the State of New York.

The New York State Medical Society has an organised scheme of defence of its members who may be brought into court for alleged malpractice. It employs an attorney who conducts every case without charge to the member who is defendant. At the late meeting of the society the attorney reported that no year in the history of organised malpractice defence has been so fruitful of results in the stamping out of blackmailing cases as the present one. More cases have been tried than in any other year, which he attributes to the fact that more physicians have become members of the society, largely for the protection which they derive from the support which the society gives them when threatened with an action for malpractice. Eighteen cases have been actually tried with but one failure to secure a verdict in favour of the defendant and in that case a new trial is sought. Since the society organised this service in 1900 a total of 250 cases have come before the attorney, and of that number 138 have been actually tried, and none finally lost, and one is now on appeal. Not one dollar of damages has ever been paid. During the past year a majority of cases begun are by women plaintiffs, which the attorney suggests may be due to the belief of their lawyers that such clients are more likely to enlist the sympathies of juries.

The Prevention of Crime by Treatment of Defectives.

The establishment of "Children's Courts" in the larger cities has led to a proposition to erect a hospital for defective children arrested for crime in New York. These courts make a very careful study of the history of each child and of its physical condition, and it appears that large numbers are susceptible of such treatment as, it is believed, will effectually change their vicious propensities. The question of undertaking the reformation of these children by hospital treatment has so appealed to the public that Mrs. W. K. Vanderbilt has offered to contribute nearly the entire sum of $1,000,000 deemed necessary to establish and equip the hospital. It is proposed to have every child brought before the court under the age of 16 years committed to this institution, where it will be thoroughly examined as to its history, habits, and physical condition, and a course of treatment will be adopted according to the results of such examination.

The Antivivisectionist Campaign.

For years the medical profession in this country has been watching with sympathetic interest the persistent persecution of its scientific *confrères* in Great Britain at the hands of the antivivisectionist zealots. We shall now have to reserve our sympathy for ourselves, for a vigorous campaign has been set in motion to impede all scientific research in this country also. It is marked from the outset by the methods with which you are so painfully familiar, and we may expect here a display of the tactics that have characterised the onslaught on your side of the Atlantic. The campaign opened by a series of sensational articles in the *New York Herald* regarding alleged horrors said to be constantly perpetrated in the Rockefeller Institute for Medical Research. A forcible reply by Dr. Simon Flexner, director of the Institute, appeared in the *New York Times*. Another mode of attack was an exhibition in New York of alleged vivisection horrors. Fortunately, the profession here awoke some little time ago to the threatening danger, and followed the admirable example set us in the old country by the establishment of the Council on Defence of Medical Research of the American Medical Association. This organisation recently began the publication in the association's journal of a series of admirable papers on the benefits in various fields directly resulting from animal experimentation. Of these one of the most interesting so far is that by

Dr. E. L. Trudeau on Animal Experimentation in Tuberculosis. It is probable that the wide public interest now taken in the fight against tuberculosis will bring this paper more directly under the public eye than could possibly be attained by any other phase of the subject. It is to be hoped that the anti-tuberculosis societies with which the country is permeated may see their way to make a wide distribution of it.

A Testimonial to Dr. Trudeau.

Speaking of Dr. Trudeau reminds one that this "great teacher of the Adirondacks" recently celebrated the twenty-fifth anniversary of the establishment of the Adirondack Cottage Sanatorium at Saranac Lake, which has been the model for so many other institutions of like kind, and in which so much excellent research work has been carried on hand in hand with beneficent clinical undertakings. All survivors who have been patients at the sanatorium during the 25 years were invited. Dr. Trudeau was presented with a handsome book containing tributes from patients both present and past.

Honour to an Octogenarian.

The fifteenth annual dinner of the Mount Sinai Hospital Alumni Association was remarkable in that it became also the celebration of the fiftieth year of continuous service at that hospital of Dr. Abraham Jacobi, who will reach his eightieth year next May. Felicitous speeches were made by Dr. Charles H. May, Professor W. H. Welch, Dr. John A. Wyeth, Dr. Joseph D. Bryant, Dr. Arpad G. Gerster, and Mr. Philip J. Goodhart, the last on behalf of the board of directors of the hospital. A gold medal suitably inscribed was presented to Dr. Jacobi. Dr. Jacobi's sterling qualities, profound learning, uncompromising aversion to all shams and to everything derogatory to the professional ideal of medicine, have contributed to make him one of the most revered physicians in the United States.

Death of Dr. Follen Cabot.

In the death of Dr. Follen Cabot at the early age of 40, New York loses a surgeon of past achievement and future promise. He was descended from John Cabot, brother of Sebastian Cabot the explorer. He had held the chair of genito-urinary diseases at the New York Post-graduate School since 1907.

Release of a Typhoid Carrier.

Some years ago a whole series of typhoid epidemics was traced to a woman cook who was found to be a bacillus carrier, and who received the sobriquet of "Typhoid Mary." She was quarantined on North Brothers' Island, New York, where she has remained for the past three years under supervision. She has recently been released by the Board of Health, subject to the conditions that she does not resume her occupation of cook and that she reports herself regularly to the Board.

Prison Reform in Missouri.

A reform measure of no little interest in regard to the treatment of criminals has been instituted in the State of Missouri. The warden of the State penitentiary has abolished the striped convict clothing hitherto worn and has substituted therefor a semi-military blue costume. This innovation is based on the view that the "prison stripes" tend to degrade a man in his own self-esteem and thereby to lessen the chances of his reform. Moreover, the diet has been improved by the substitution of prime meat for the cheaper joints that hitherto have been in vogue. Shower-baths also have been installed and each prisoner is given one twice a week. The prisoners seem to appreciate these efforts to re-humanise them and have passed resolutions pledging themselves to show their appreciation in their conduct; and I am authoritatively informed that breaches of discipline and insubordination have decreased 50 per cent. up to date. Of course, there are those who argue that the "parlour method" of treating convicts will tend to lessen the deterrent effect of a penitentiary sentence. But it may be replied that the public degrading of prisoners has not so far proved any too efficacious in preventing crime, and, further, that it is at least as important not to make a hardened criminal out of every offender who has once transgressed as it is to prevent others by terrorism from taking a first step in crime. This is only another instance of Missouri's forwardness in social economic matters, for it was a St. Louis judge who instituted the "Pollard pledge system" of dealing with habitual inebriates, which has been widely copied, not only in this country, but I believe in England also. Another reform in matters criminal was initiated in the same city by the establishment of a standing commission of neurologists of acknowledged reputation, who, on the request of the prison physician or authorities, examine and report before trial on all prisoners detained on a criminal charge, if there is the least ground for supposing that they are in any degree irresponsible. The commission being a voluntary one, without legal countenance other than the confidence of the court, its decisions are, of course, open to challenge, but it is a noteworthy fact that in the four years of the commission's existence its decision never has been challenged, and that the plea of irresponsibility has never been offered in defence at a trial after the commission had pronounced to the contrary. On the other hand, in the case of pauper criminals it performs a humane duty by reporting any cases of irresponsibility among those awaiting trial, whereon the judge at once issues a writ *de lunatico inquirendo* without waiting until the trial shall have involved the State in considerable expense, and the insane are thus spared criminal sentence. The success of the commission has been so far demonstrated that the St. Louis Medico-Legal Society is now endeavouring to have it constituted an official body by act of the Legislature.

What is Whisky?

Some time ago the question "What is whisky?" occupied public attention (and your columns) in England. We have just had a ruling here, approved by the Federal Departments of Agriculture, the Treasury, and Commerce and Labour, to the effect that "all unmixed distilled spirits from grain, coloured and flavoured with harmless colour and flavour, in the customary ways, either by the charred barrel process or by the addition of caramel and harmless flavour, of potable strength, and not less than 80 proof, are entitled to the name whisky without qualification. ..... Whiskies of the same or different kinds, i.e., straight whisky, rectified whisky, redistilled whisky, and neutral spirits whisky or like substances and mixtures of such whiskies, with or without harmless colour or flavour used for purposes of colouring and flavouring only, are blends under the law, and must be so labelled. ..... Since the term whisky is restricted to distillates of grain, and distillates from grain and distillates from other sources are unlike substances, such distillates from other sources without admixture with grain distillates are misbranded if labelled 'whisky' without qualification or as a blend of whiskies. However, mixtures of whisky with a potable alcoholic distillate from sources other than grain, such as cane, fruit, or vegetables, are not misbranded if labelled compound whisky," provided certain requirements of the law are complied with. It is more than probable that this ruling will knock out a good many so-called whiskies from the market, for much of the vitriolic stuff that has hitherto been sold as whisky in some parts of the country would find it impossible to trace even a strain of grain in its lineage.

The Dietary of Soldiers.

The experiments of Professor Chittenden of Yale made some years ago on a squad of soldiers, from which he arrived at the conclusion that both life and health can be adequately sustained on a much more meagre diet than had hitherto been supposed possible, have been challenged within the past few days by Major Woodruff of the Army Medical Corps. Major Woodruff's later investigations appear to show that although the men were reported in fine condition at the end of Professor Chittenden's experiments, most of those experimented on suffered severely, and he asserts that they would have suffered still more had they not surreptitiously taken other meals than those prescribed during the experiments.

March 7th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Feb. 5th show 14,144 deaths for all India and Burma, as compared with 12,364 in the week preceding. Of these, the Bombay Presidency reported 881; Bengal Presidency, 1601; the United Provinces, 6601; the Punjab, 2645; Burma, 256; the Central Provinces, 1238; Central India, 61; and Rajputana, 654. Ballia and Azamgarh districts continue to be the districts most affected in the United Provinces. For the week

ending Feb. 12th similar returns show 15,286 deaths for all India and Burma. Bombay Presidency reported 1015; Bengal Presidency, 2120; the United Provinces, 6700; the Punjab, 2318; Burma, 265; the Central Provinces, 1706; Rajputana, 918; and Central India, 76.

The Health of Bombay City.

The more important feature of the health returns for the city and suburbs of Bombay for the past week is the continued rise in the prevalence of plague. As a general rule, the warm weather leads to a reduction in the incidence of plague, owing to the poorer classes of natives sleeping out of doors in the open air instead of in their houses, where they are more exposed to fleas. The increase of plague during the warmer weather of the last week is therefore rather peculiar. Last week there were 60 deaths from plague, as against 29 in the week before and 28 in the corresponding week of last year. Small-pox continues to be prevalent, the deaths being 24, against 21 in the previous week. There were 62 attacks from small-pox, and of these 16 cases occurred amongst the pilgrims returning from Jeddah. Small-pox occurring in Bombay city is of the utmost importance for European tourists to guard against, as many of these wanderers arrive at Bombay after a long sea voyage and have of necessity a quantity of soiled linen to be washed. The washing is carried out by native washermen on the outskirts of the city, and the clothing is mixed indiscriminately with native soiled linen, so that infection may very easily take place. The articles are next taken by the washermen to their hovels in the slums to be made up and are thus again exposed to a grave danger of infection. The mortality from all causes in Bombay City has risen in the last week to 734 as against 662 in the previous week and 700 last year, the increase being largely due to the increased prevalence of plague. It is still, however, well below the five year annual mean, which is 883. The corrected death-rate of the population is 37·59 per 1000, as against 32·14, which represents the ratio prior to the prevalence of plague.

Inspections by the Commander-in-Chief.

The new Commander-in-Chief, accompanied by a small staff, has been making a tour of inspection of some of the more important Indian military cantonment stations. Following the custom initiated by his predecessor Lord Kitchener, Sir O'Moore Creagh contents himself with a small retinue of his staff and does not travel about with the same *éclat* and large following that was wont to be the rule in former days when a commander-in-chief went his round of inspections. His Excellency has created a favourable impression amongst the native classes by being master of many Indian dialects, and he has also shown his sympathy in the question of prevention of disease as well as sanitation. On his way to Lucknow last week he broke his journey at Cawnpore, and after his inspections attended a garden party given in his honour by the officers of the Royal Army Medical Corps of the station, which was very largely attended and most successful.

A New Health Resort for Madras.

The unusual cold of the present winter in Madras, more especially in the Nilgiri Hills, has resulted in an epidemic of influenza occurring both at Ootacamund and Coonoor; this has caused sufferers to look about for some health resort, cheap and easy of access, where they might shake off their ailment and convalesce. It was found that the place that has proved of most benefit was Metapolliam, a village which is a terminus of the Madras broad-gauge railway. Metapolliam has recently developed in size, and several nice bungalows have been built which can be rented for short periods. The railway station may before long become a junction, as another line is in prospect and the survey is actually in progress. Visitors from the Madras Presidency, especially the north, will be glad to hear of Metapolliam and its advantages, as when the south-west monsoon rains make Ootacamund, and the north-east Coonoor, depressing they can take a change of air at little cost and live well at Metapolliam, for much less than it is possible to live on the plateau. Convalescents will return to their homes renovated in health after an exhilarating change of air. Metapolliam is open to both monsoon winds but to a minimum rainfall. Its elevation is from 1000 to 1200 feet above mean sea level. On both sides of its river, which rises in the hills, large indiarubber plantations are springing up and appear to be in a flourishing condition.

Feb. 19th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Epidemic among Poultry.

RECENTLY mention was made of a mysterious mortality among wild fowl in a certain district in Victoria. This epidemic disease has spread in various quarters, and caused great destruction of domestic poultry. Professor Gilruth of the University of Melbourne states that in one chicken submitted to him he has discovered the bacillus of chicken cholera. Dr. Brown, the Government inspector of export foodstuff, is of opinion that the disease is roup.

Insanity in Victoria.

The report of the Inspector-General states that the number of certified insane in Victoria has risen during 1908 from 5052 to 5111. The proportion of insane persons to the general population is now 1 in 248. This is the highest ratio of any Australian State, but it is the least fluctuating. Recent legislation has caused a number of new patients to come within the ken of the department, so that of late the increase is more apparent than real and there is actually a decrease of freshly-occurring cases of insanity. The cost of maintenance was 10*s.* 4½*d.* per week per patient, as against 9*s.* 8¾*d.* for the previous year. Dr. Jones considers that the provision for pathological work is not satisfactory, and that it is essential that a whole-time pathologist should be appointed, with general control over the work. The plans for a new asylum are nearly ready for Cabinet consideration. The site will be about eight miles from Melbourne, where the Government has an estate of 208 acres, which, however, Dr. Jones considers inadequate and recommends the purchase of an adjoining estate of 1000 acres in addition. When the new building is available the present asylum at Kew will be abandoned.

Tropical Diseases.

The Queensland Institute of Tropical Medicine was practically inaugurated at Townsville on Jan. 4th. The new director, Dr. A. Breinl, was entertained at dinner by Dr. Frodsham, Anglican Bishop of North Queensland, who was the originator of the scheme. Dr. Breinl, in the course of a speech, stated he had promises of aid from the Australian Universities and Commonwealth and States Governments. He dwelt on the necessity of solving the question of making tropical regions habitable both from humanitarian and commercial standpoints.

Public Health in Tasmania.

In his report on public health in Tasmania for the year ended June 30th, 1909, Dr. J. S. C. Elkington, the chief health officer, says that the position claimed by Tasmania as the sanatorium State of the Commonwealth demands for its justification a relatively high standard of sanitation, but the actual conditions nevertheless fall short of this. The incidence of communicable diseases in Tasmania is also somewhat high, for among a population of 185,824 persons living under exceptionally favourable natural conditions there were 391 cases of typhoid fever and 205 cases of diphtheria reported in 12 months, together with 180 deaths from tuberculous diseases. Apart, however, from these special causes of illness, the vital statistics of Tasmania for 1908 were satisfactory, the births being 30·5 per 1000, the total deaths 11·5 per 1000, and the marriages 7·7 per 1000. Dr. Elkington draws particular attention to the apathy of local authorities as regards the protection of sources of water-supply, photographs of six examples being shown. One of these was a view in the vicinity of a river about two miles above the in-take of the Longford water-supply, at a place where open gutters only 40 or 50 feet long and terminating in the river were habitually used for latrine purposes.

Remarkable Family Longevity.

A family of five brothers named Carpenter arrived in Australia in 1839 in the sailing ship *Orestes*. Recently they met, after 70 years, in Newcastle, N.S.W. Their present ages are 83, 81, 77, 74, and 70 years respectively, and all are hale and hearty.

Personal Items.

Mr. G. A. Syme, F.R.C.S. Eng., who has been absent on an extended European and American tour, has returned to Melbourne. He was present at the Empire Press Conference

as a representative of the Melbourne *Age* newspaper, which was owned by an uncle and which is still retained by the family.—Dr. Elkington has taken over the position of chief health officer for Queensland, rendered vacant by the resignation of Dr. B. B. Ham.

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The committee considered that the work accomplished by the nurses was most satisfactory, and that this experiment in the home treatment and nursing of consumptives has proved to be an effective way of reaching and helping in a practical manner a great number of poor consumptive patients.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The annual festival dinner of this association was held at the Hotel Cecil, Strand, on March 17th, under the chairmanship of its President, Sir Alfred Keogh. The event of the evening was the presentation to Dr. Alfred Sheridan of the Arnott Memorial Medal by the President. This medal is awarded each year to the medical graduate of an Irish university or a diplomate of an Irish corporation who during the previous three years has performed an act of heroism or distinguished service, or accomplished any achievement in medical surgery or medical research. Dr. Sheridan was introduced to the President by Mr. T. Hobbs Crampton, chairman of the council of the association, who stated that the medal was awarded to Dr. Sheridan for the following deed of heroism. On August 24th, 1909, a Mr. O'Neil was bathing in the sea near Westport, county Mayo, when he became exhausted and sank. Some children who were looking on became frightened and gave the alarm, bringing to the beach Dr. Sheridan. The children, however, could only vaguely indicate where Mr. O'Neil had sunk. Dr. Sheridan had to locate him by diving; he eventually found him floating away on the tide, midway between the surface of the water and the bottom. With considerable difficulty Dr. Sheridan brought him ashore and after about an hour's strenuous work he had him out of danger. The President, in replying to the toast of "The Association," proposed by Dr. Seymour Taylor, referred to the disability under which Irish medical men lay in regard to hospital appointments in England, and in the annual report of the council it was noted that the labours of the association, in conjunction with the Scottish Medical Association regarding the hospital disabilities last year, had yielded one very gratifying result. Mr. C. H. Hartt of Greenwich had written stating that he had obtained a concession from the board of management of the Miller Hospital, Greenwich, relative to the future appointment of surgeon. The by-law in future would read: "Shall be Fellows by examination of the Royal College of England, Ireland or Edinburgh." Amongst other speakers were Mr. R. Thompson, M.P., Sir Charles Cuffe, Dr. H. Macnaughton-Jones, Dr. W. E. St. Lawrence Finny, and Sir William S. Church.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 16TH.

Cow-pox and Workmen's Compensation.

Mr. C. DUNCAN (on behalf of Mr. BARNES) asked the Under Secretary of State for the Home Department whether his attention had been called to the recent outbreak of cow-pox at Vale Farm, Pinner-road, Sudbury, as a result of which four persons contracted the disease; and whether he would consider the advisability of extending the Workmen's Compensation Act to cover this and other diseases of a similar nature.—Mr. MASTERMAN replied: The Secretary of State's attention has not previously been called to this outbreak, but he has received the particulars which the honourable Member has been good enough to send him, and he will make inquiry into the subject and also consider the point raised in the last part of the question.

Indian Medical Service.

Mr. KELLY asked the Under Secretary of State for India whether he would inquire whether the resolution passed unanimously at the meeting of the medical profession, held under the auspices of the Bombay Medical Union on Sept. 8th, 1909, was sent to the proper authorities at Bombay to be forwarded to the Secretary of State; and whether he was aware of the belief among Indians that the main obstacle to a real reform of the medical service of their country was the desire to reserve the highly salaried posts to people of this country.—Mr. MONTAGU wrote in reply: The Secretary of State for India is not acquainted with the resolution referred to, but if, as stated, it has been sent to the proper authorities in Bombay for transmission to him it will doubtless reach him in due course. I am not aware of the existence among Indians of any such erroneous belief as that referred to in the concluding portion of the question. Answers given to similar questions in this Parliament and the last, and the papers laid before Parliament, to which I would refer the honourable Member, afford ample evidence of the efforts that are being made to widen the field in regard to medical appointments.

The General Hospital, Madras.

Mr. KELLY asked the Under Secretary of State for India whether the matron, the assistant matron, and the head nurse at the General Hospital, Madras, were paid by the Indian taxpayer; whether those posts were open to Indians; if so, how many Indians had hitherto been appointed to them; and whether, considering the importance of spreading a general knowledge of medical matters among Indian women, he would give greater facilities to such of them as desired to join the nursing staff and to rise to the highest posts at the General Hospital.—Mr. MONTAGU (in a written answer) replied: The General Hospital, Madras, is supported entirely from Indian revenues. As this is the principal State hospital in Madras and receives many European and Eurasian patients it seems advisable that the matron, assistant matron, and head nurse should be Europeans or Eurasians trained in European hospitals. Such training is hardly available for Indians. The diffusion of a knowledge of medical matters among Indian women, the importance of which is fully recognised, is promoted by schools for the training of nurses attached to this and to other large hospitals in India.

The Medical College, Madras.

Mr. KELLY asked the Under Secretary of State for India whether there were under the senior assistant professor at the Medical College, Madras, and the senior assistant surgeon, General Hospital, Madras, Indian civil doctors with University qualifications sufficient to enable them to be registered under the Medical Acts and to be recognised as medical practitioners in this country; whether the present holders of these posts were military assistant surgeons who had only four years' course of studies prior to qualification; whether he was aware that military assistant surgeons were not allowed according to the Army Regulations to use the knife, and were allowed to perform only the duties of dispensers and apothecaries as long as they were attached to military hospitals; and what was the number of natives of India who had so far filled these posts.—Mr. MONTAGU wrote in reply: There appear to be no Indian civil doctors, with the qualifications indicated, under the senior assistant professor at the Medical College, Madras. As regards the status of the latter officers I beg to refer the honourable Member to the answer given by my predecessor to the question by the honourable Member for Galway North on Oct. 21st last. It is not possible to state what number of natives of India have filled these posts. I am not aware of any rule forbidding military assistant surgeons to perform operations.

Colour-Blind Tests.

Mr. HENNIKER HEATON asked the President of the Board of Trade whether any steps had been taken to reform the methods of testing for colour blindness adopted by the Board of Trade.—Mr. BUXTON wrote in reply: The important question to which my honourable friend refers is engaging my attention.

THURSDAY, MARCH 17TH.

Typhoid Fever in Madeira.

Mr. STAVELEY-HILL asked the Secretary of State for Foreign Affairs whether he had received any communication from Madeira on the subject of the recent outbreak of typhoid fever at the principal hotel at Funchal; and whether he was in a position to say that the authorities at Lisbon had converted the mountain water in their possession for the amelioration of the distress caused amongst British visitors to Madeira by the neglect of the municipality to provide proper drinking water.—Sir EDWARD GREY replied: According to information which I have received from Madeira, the cases of typhoid fever have been practically confined to one hotel, there being only four or five other cases in the rest of Funchal. The question of approaching the Portuguese Government with a view to the improvement of the water-supply has been brought to my notice and to that of His Majesty's Minister at Lisbon, but it does not appear to be a matter in which I can properly intervene officially.

Deaths from Anthrax.

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That in the opinion of the Dublin Hospitals Tuberculosis Committee that the Dublin corporation should appoint a bacteriologist, whose duties should extend to other diseases than tuberculosis, for example, diphtheria, is sound; and that an appointment can be legally made under the 11th Section of the Public Health (Ireland) Act, 1878. This committee therefore approve the said recommendation of the Public Health Committee.

The committee considered that the work accomplished by the nurses was most satisfactory, and that this experiment in the home treatment and nursing of consumptives has proved to be an effective way of reaching and helping in a practical manner a great number of poor consumptive patients.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The annual festival dinner of this association was held at the Hotel Cecil, Strand, on March 17th, under the chairmanship of its President, Sir Alfred Keogh. The event of the evening was the presentation to Dr. Alfred Sheridan of the Arnott Memorial Medal by the President. This medal is awarded each year to the medical graduate of an Irish university or a diplomate of an Irish corporation who during the previous three years has performed an act of heroism or distinguished service, or accomplished any achievement in medical surgery or medical research. Dr. Sheridan was introduced to the President by Mr. T. Hobbs Crampton, chairman of the council of the association, who stated that the medal was awarded to Dr. Sheridan for the following deed of heroism. On August 24th, 1909, a Mr. O'Neil was bathing in the sea near Westport, county Mayo, when he became exhausted and sank. Some children who were looking on became frightened and gave the alarm, bringing to the beach Dr. Sheridan. The children, however, could only vaguely indicate where Mr. O'Neil had sunk. Dr. Sheridan had to locate him by diving; he eventually found him floating away on the tide, midway between the surface of the water and the bottom. With considerable difficulty Dr. Sheridan brought him ashore and after about an hour's strenuous work he had him out of danger. The President, in replying to the toast of "The Association," proposed by Dr. Seymour Taylor, referred to the disability under which Irish medical men lay in regard to hospital appointments in England, and in the annual report of the council it was noted that the labours of the association, in conjunction with the Scottish Medical Association regarding the hospital disabilities last year, had yielded one very gratifying result. Mr. C. H. Hartt of Greenwich had written stating that he had obtained a concession from the board of management of the Miller Hospital, Greenwich, relative to the future appointment of surgeon. The by-law in future would read: "Shall be Fellows by examination of the Royal College of England, Ireland or Edinburgh." Amongst other speakers were Mr. R. Thompson, M.P., Sir Charles Cuffe, Dr. H. Macnaughton-Jones, Dr. W. E. St. Lawrence Finny, and Sir William S. Church.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 16TH.

Cow-pox and Workmen's Compensation.

Mr. C. DUNCAN (on behalf of Mr. BARNES) asked the Under Secretary of State for the Home Department whether his attention had been called to the recent outbreak of cow-pox at Vale Farm, Pinner-road, Sudbury, as a result of which four persons contracted the disease; and whether he would consider the advisability of extending the Workmen's Compensation Act to cover this and other diseases of a similar nature.—Mr. MASTERMAN replied: The Secretary of State's attention has not previously been called to this outbreak, but he has received the particulars which the honourable Member has been good enough to send him, and he will make inquiry into the subject and also consider the point raised in the last part of the question.

Indian Medical Service.

Mr. KELLY asked the Under Secretary of State for India whether he would inquire whether the resolution passed unanimously at the meeting of the medical profession, held under the auspices of the Bombay Medical Union on Sept. 8th, 1909, was sent to the proper authorities at Bombay to be forwarded to the Secretary of State; and whether he was aware of the belief among Indians that the main obstacle to a real reform of the medical service of their country was the desire to reserve the highly salaried posts to people of this country.—Mr. MONTAGU wrote in reply: The Secretary of State for India is not acquainted with the resolution referred to, but if, as stated, it has been sent to the proper authorities in Bombay for transmission to him it will doubtless reach him in due course. I am not aware of the existence among Indians of any such erroneous belief as that referred to in the concluding portion of the question. Answers given to similar questions in this Parliament and the last, and the papers laid before Parliament, to which I would refer the honourable Member, afford ample evidence of the efforts that are being made to widen the field in regard to medical appointments.

The General Hospital, Madras.

Mr. KELLY asked the Under Secretary of State for India whether the matron, the assistant matron, and the head nurse at the General Hospital, Madras, were paid by the Indian taxpayer; whether those posts were open to Indians; if so, how many Indians had hitherto been appointed to them; and whether, considering the importance of spreading a general knowledge of medical matters among Indian women, he would give greater facilities to such of them as desired to join the nursing staff and to rise to the highest posts at the General Hospital.—Mr. MONTAGU (in a written answer) replied: The General Hospital, Madras, is supported entirely from Indian revenues. As this is the principal State hospital in Madras and receives many European and Eurasian patients it seems advisable that the matron, assistant matron, and head nurse should be Europeans or Eurasians trained in European hospitals. Such training is hardly available for Indians. The diffusion of a knowledge of medical matters among Indian women, the importance of which is fully recognised, is promoted by schools for the training of nurses attached to this and to other large hospitals in India.

The Medical College, Madras.

Mr. KELLY asked the Under Secretary of State for India whether there were under the senior assistant professor at the Medical College, Madras, and the senior assistant surgeon, General Hospital, Madras, Indian civil doctors with University qualifications sufficient to enable them to be registered under the Medical Acts and to be recognised as medical practitioners in this country; whether the present holders of these posts were military assistant surgeons who had only four years' course of studies prior to qualification; whether he was aware that military assistant surgeons were not allowed according to the Army Regulations to use the knife, and were allowed to perform only the duties of dispensers and apothecaries as long as they were attached to military hospitals; and what was the number of natives of India who had so far filled these posts.—Mr. MONTAGU wrote in reply: There appear to be no Indian civil doctors, with the qualifications indicated, under the senior assistant professor at the Medical College, Madras. As regards the status of the latter officers I beg to refer the honourable Member to the answer given by my predecessor to the question by the honourable Member for Galway North on Oct. 21st last. It is not possible to state what number of natives of India have filled these posts. I am not aware of any rule forbidding military assistant surgeons to perform operations.

Colour-Blind Tests.

Mr. HENNIKER HEATON asked the President of the Board of Trade whether any steps had been taken to reform the methods of testing for colour blindness adopted by the Board of Trade.—Mr. BUXTON wrote in reply: The important question to which my honourable friend refers is engaging my attention.

THURSDAY, MARCH 17TH.

Typhoid Fever in Madeira.

Mr. STAVELEY-HILL asked the Secretary of State for Foreign Affairs whether he had received any communication from Madeira on the subject of the recent outbreak of typhoid fever at the principal hotel at Funchal; and whether he was in a position to say that the authorities at Lisbon had converted the mountain water in their possession for the amelioration of the distress caused amongst British visitors to Madeira by the neglect of the municipality to provide proper drinking water.—Sir EDWARD GREY replied: According to information which I have received from Madeira, the cases of typhoid fever have been practically confined to one hotel, there being only four or five other cases in the rest of Funchal. The question of approaching the Portuguese Government with a view to the improvement of the water-supply has been brought to my notice and to that of His Majesty's Minister at Lisbon, but it does not appear to be a matter in which I can properly intervene officially.

Deaths from Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether his attention had been called to the death of Miss Edith

Derbyshire, who recently contracted anthrax at the works of Messrs. Campbell and Harrison, woolcombers, of Shipley, a branch of the woolcombers' syndicate; whether he would examine the depositions of evidence given at the subsequent inquest; and whether he would say how many cases of anthrax had occurred among Messrs. Campbell and Harrison's employees during the last ten years, and the number of cases which had occurred at the whole of the combined firms of Woolcombers, Limited, during the same period, distinguishing between different years and fatal and non-fatal cases.—Mr. CHURCHILL answered: A report of this case has been received in the department and I have also obtained the depositions taken at the inquest from the coroner. An exhaustive examination of the existing conditions at the works has been directed. I will circulate the figures which the honourable Member asks for, and which cannot conveniently be given in an oral reply, with the votes.

Imported Chinese Pork.

Mr. FELL asked the President of the Local Government Board whether the Chinese pork which was rejected in London and rejected again at Liverpool would be again inspected if it was attempted to be landed after it had been cured as bacon at some foreign port or in the Isle of Man; and why the pork was not ordered to be destroyed when it was first rejected at London.—Mr. BURNS replied: The consignment in question will be liable to inspection if re-imported into England. As regards the second part of the question I may explain that the regulations do not require that the meat should be destroyed. The importer is allowed the option of re-exporting it.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.

Neighbours and Friends. By M. Loane. Price 6*s*.

Physiology of the Special Senses. By M. Greenwood, Jun., M.R.C.S., L.R.C.P., F.S.S. Price 8*s*. 6*d*. net.

BAILLIÈRE, TINDALL, AND COX, London.

The Optic Nerve and the Accessory Sinuses of the Nose. A Contribution to the Study of Canalicular Neuritis and Atrophy of the Optic Nerve of Nasal Origin. By Professor A. Onodi. Authorised Translation by J. Lückhoff, M.D. Edin., Ch.B. Price 10*s*. 6*d*. net.

COLLINGRIDGE, W. H. AND L., London.

Bees for Profit and Pleasure. By H. Geary. Edited by T. W. Sanders, F.L.S. Price 1*s*. net.

The City of London Year Book and Civic Directory for 1910. Price 5*s*. net.

CONSTABLE AND CO., LIMITED, London.

International Sport. A Short History of the Olympic Movement from 1896 to the Present Day. By Theodore Andrea Cook. Price 3*s*. 6*d*.

FISCHER, GUSTAV, Jena.

Mitteilungen aus der Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm. Herausgegeben von Dr. J. Widmark. Elftes Heft. Mit einem Bildnis des Herausgebers. Price M.7.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Consumption, its Prevention and Home Treatment. A Guide for the Use of Patients. By H. Hyslop Thomson, M.D. Price 2*s*. net.

Practical Pathology. A Manual for Students and Practitioners. By G. Sims Woodhead, M.A. Cantab., M.D. Edin., Hon. LL.D. Toronto, F.R.S. Edin. Fourth edition. Price 31*s*. 6*d*. net.

The Expectation of Life of the Consumptive after Sanatorium Treatment. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. Edin. Price 3*s*. 6*d*. net.

GRAFTON PRESS, THE, New York.

Transactions of the American Association of Genito-Urinary Surgeons. Volume III., 1908; Volume IV., 1909. Price not stated.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

The Plant Cell: Its Modifications and Vital Processes. A Manual for Students. By Harold A. Haig, M.B., B.S. Lond. Price 6*s*. net.

HEINEMANN, WILLIAM, London.

When No Man Pursueth. An Everyday Story. By Mrs. Belloc Lowndes. Price 6*s*.

HIRSCHWALD, AUGUST, Berlin.

Anleitung zur mikroskopischen Untersuchung des Auges. Von Prof. Dr. R. Greeff. Dritte, vermehrte Auflage, unter Mitwirkung, von Prof. Stock (Freiburg) und Prof. Wintersteiner (Wien). Price M.4.

KEGAN PAUL, TRENCH, TRÜBNER AND CO., LIMITED, London.

Psychic Healing: An Account of the Work of the Church and Medical Union. Price 6*d*. net.

KING, SELL, AND OLDING, LIMITED, London.

Marriage, Divorce, and Separation: Law and Morals in Relation to Church and State, the Divorce Court, Magisterial Orders, Proposed County Court Jurisdiction. By Douglas M. Ford, Solicitor (London) and Notary Public (Provincial). Price not stated.

LEWIS, H. K., London.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. Aberd. Vol. II. Vascular System, Bones, and Joints, Amputations. Price not stated.

MELROSE, ANDREW, London.

The Laws of Life and Health. By Alexande Bryce, M.D. Glas., D.P.H. Camb. Price 7*s*. 6*d*. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Beiträge zur Carcinomforschung. Aus der I.Med. Klinik (Prof. C. v. Noorden) in Wien. Herausgegeben von Priv.-Dozent Dr. H. Salamon. Heft II. Über einen Harnbefund bei Carcinomatösen. Zugleich ein Beitrag zur Kenntnis der Oxyproteinsäureausscheidung beim Menschen. Von Hugo Salomon und Paul Saxl. Die temperaturherabsetzende Wirkung von Gewebspresssäften und Lipoiden und deren Bedeutung für die Pfeiffersche Reaktion. Von Herbert Elias. Price M.4.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENNEE, ALBERT E., M.B., Ch.B. Edin., has been appointed Junior Demonstrator in the Department of Pathology at the University of Sheffield.

BRISCOE, JAMES RYND, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Chippenham (Wilts) Cottage Hospital.

BULLOCH, O. S., M.B., Ch.B. Edin., has been appointed House Physician at the Bedford County Hospital.

FORTESCUE-BRICKDALE, J. M., M.D. Oxon., has been appointed Physician to Clifton College, Bristol.

GREEN, JOHN BALCH, M.B. Lond., L.R.C.P. Lond., M.R.C.S., D.P.H. Irel., has been appointed District Medical Officer, Medical Officer to Southmead Workhouse, and Public Vaccinator by the Bristol Board of Guardians.

HARRIES, D. J., M.B., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Obstetric Assistant to University College Hospital.

HASSARD, WILLIAM, M.D., B.Ch., B.A.O. Dub., has been appointed Honorary Medical Officer to the Chippenham (Wilts) Cottage Hospital.

KNAGGS, R. L., M.D. Cantab., F.R.C.S. Eng., has been appointed Professor of Surgery in the University of Leeds.

MORRIS, C. W., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at University College Hospital.

MOYNIHAN, B. G. A., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Professor of Clinical Surgery in the University of Leeds.

STEELE-PERKINS, DUNCOMBE STEELE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Honiton (Devon) Board of Guardians.

TASKER, H. L., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at University College Hospital.

WILSON, A. GARRICK, M.C., M.B. Cantab., F.R.C.S. Eng., has been appointed Tutor in Surgery at the University of Sheffield.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and washing.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

BRISTOL GENERAL HOSPITAL.—House Physician, Casualty House Surgeon, and Assistant House Physician for six months. Salary £60 each, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House Surgeon for six months. Salary £50 per annum, with board, rooms, and attendance.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CAPETOWN, SOMERSET HOSPITAL.—Assistant Medical Officer. Salary £200 per annum, with rations and quarters.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £75 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon; also House Physician. Salary in each case £80 per annum, with board, washing, and residence.

CROYDON BOROUGH HOSPITAL.—Senior Resident Medical Officer and Bacteriologist. Salary £160 per annum, with board, lodging, and washing.

CROYDON GENERAL HOSPITAL.—Honorary Radiographer.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

ILKESTON, BOROUGH OF.—School Medical Officer and Assistant Medical Officer of Health (female). Salary £250 per annum.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum and board.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Honorary Physician. Also Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LEICESTERSHIRE AND RUTLAND ASYLUM, Narborough.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

LEITH HOSPITAL.—Anæsthetist.
LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Honorary Surgeon.
LONDON FEVER HOSPITAL, Islington, N.—Honorary Surgeon.
LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Two Assistant Anæsthetists.
MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c.
MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Pathologist. Salary £10 per annum.
MIDDLESBROUGH, NORTH RIDING INFIRMARY.—House Surgeon. Salary £100 per annum, with residence, board, and washing.
NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and laundry.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodgings, and washing.
ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.
ROYAL INSTITUTE OF PUBLIC HEALTH.—Harben Demonstrator of Bacteriology and Comparative Pathology. Salary £250 per annum.
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried. Salary £100, with rooms, board, and washing.
ROYAL NAVAL MEDICAL SERVICE.—Examination for Fifteen Commissions.
ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—Honorary Anæsthetist.
SALFORD ROYAL HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Anæsthetist. Salary £15 per annum.
SEAMEN'S HOSPITAL SOCIETY, DREADNOUGHT HOSPITAL, Greenwich, S.E.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Pathologist. Salary £100 per annum. Also Assistant Physician.
SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing. Also Two Honorary Assistant Dental Surgeons.
SHEFFIELD UNIVERSITY.—Demonstrator in Anatomy. Salary £150 per annum.
SHREWSBURY, SALOP AND MONTGOMERY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.
SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.
STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing.
STOW-ON-THE-WOLD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £50 per annum.
THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board and laundry.
UNIVERSITY COLLEGE HOSPITAL.—Mechanical Assistant in Electro-Radiographic Department. Salary £78 per annum, with dinner and tea.
WAKEFIELD GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board and washing.
WEST RIDING OF YORKSHIRE.—Assistant County Medical Officer. Also Bacteriologist. Salary in each case £250 per annum.
YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.
YORK DISPENSARY.—Two Resident Medical Officers, unmarried. Salary £130 per annum, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

CUNNINGHAM.—On Feb. 27th, at Boksburg North, Transvaal, the wife of Norman Rowsell Cunningham, M.R.C.S., L.R.C.P., of a daughter, who only survived her birth a few hours.
HARDCASTLE.—On March 15th, at Eldon-street, Newcastle-upon-Tyne, the wife of William Hardcastle, M.B. Lond., M.R.C.S., of a daughter.
PASSMORE.—On March 16th, at Canning House, Burbage, Leicestershire, the wife of Ernest Passmore, M.R.C.S., L.R.C.P. (*née* Mander), of a son.

MARRIAGES.

MARRIAGE—RICHARDSON.—On March 19th, 1910, at All Souls' Church, Langham-place, by the Rector, the Rev. F. S. Webster, M.A., Herbert James Marriage, M.B., B.S. Lond., F.R.C.S., son of James Marriage, of Kynard, Beckenham, to Amy Grace, only daughter of Edward W. Richardson, of The Firs, Romford.
MARTIN—COMBES.—On March 19th, at Holy Trinity Church, Marylebone, Sidney Martin, M.D., to Constance Emily, daughter of the late T. Whitney Combes, Esq.

DEATHS.

CURGENVEN.—On March 18th, at Fareham, Hants, William Grafton Curgenven, M.D., lately of Derby, aged 68 years.
ROUGHTON.—On March 19th, at Kettering, James John Roughton, J.P., M.R.C.S., in his 87th year.
SANDFORD.—On March 17th, at Iford Lodge, Market Drayton, Shropshire, Folliott James Sandford, M.D., V.D., in his 93rd year.

N.B.*—*A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

QUACKERY AND THE MUSIC-HALL STAGE.

IN "Dr." Bodie's recent appeal against the verdict and judgment secured by Mr. C. H. Irving in the High Court of Justice his counsel endeavoured to put forward as a point in his client's favour that although his "degrees" were bogus and his "science" a sham, his advertising of them, including the use he had made of them in deceiving the respondent, was no more than might reasonably be expected in a "showman." In other words, he suggested that sham and deception are to be expected in performances upon the music-hall stage, and are considered justifiable when exhibited for the purpose of misleading a music-hall audience. Lord Justice Moulton is reported as saying on the occasion referred to, interrupting the argument of Bodie's counsel, "The appellant describes himself as a Doctor of Philosophy and Doctor of Science at a cheap institution, so that without having completed a regular course of instruction and passing a satisfactory examination he got his diploma." To this counsel replied: "I agree that it ought not to be done, but he is a showman"; and Lord Justice Moulton retorted, "He has got unrivalled publicity by that lie." The line of argument thus adopted is worth noting in a medical newspaper, not because the court which dismissed the appeal without ceremony acquiesced in it, but because it suggests as a general rule applicable to all music-hall performances that which does not apply generally at all, though it does apparently apply with regard to parodies of science and medicine. It may be said, speaking generally, that honesty and the honourable display of genuine skill are leading characteristics of the modern variety stage, and that shams and deceptions of the public do not attract and are not attempted or countenanced in shows which command any measure of success, either in important London houses or in humbler surroundings. The singer or dancer who aspires to rival Harry Lauder or Mlle. Génée seeks to do so by genuine hard work and by improving his or her powers. There is no room for sham in their performance. The juggler who desires to out-juggle Cinquevalli has to perform wonders with a billiard cue and balls of the ordinary kind, not to deceive with any skilfully substituted apparatus. The conjurer and the ventriloquist are what they pretend to be, and those who applaud the results which they achieve are not asked to believe them to be wizards. Almost the only exception we can recall to the general rule that the man who deceives acknowledges that he is doing so, and challenges the onlooker to detect how he does it, is in the case of those who pretend to some form of scientific skill, frequently connected with the curing of bodily ailments. The reputed hypnotist, mesmerist, bonesetter, or "bloodless surgeon," and the tooth drawer who in a booth hauls out the molars of his victims while a cornet and a drum drown their expressions of pain, all perform their dangerous functions while pretending to powers and qualifications which they do not possess, and all are liable to do incalculable mischief to those who submit their bodies to them. As such performances are frequently an insult to medical and surgical science as well as a source of danger to the public, is it too much to ask music-hall managers and performers alike to set their faces consistently against them, to have nothing to do with them, and to refuse to be associated with them in the public eye? We need hardly remind music-hall performers or the "profession" in general, of the friendly relations which have ever existed between them and the profession of medicine. The hospitals are ever open for the prompt reception of those among them who meet with injury in the exercise of their calling before the footlights. The expenses of those who succumb to illness and are treated privately are not, we believe, often increased by heavy accounts for medical attendance. We ask them to make a return for what they receive by dissociating themselves, as far as they are able to do so, from the mountebank who by the mimicry of medical science discredits the stage upon which he performs, and supplants the honest entertainers who should occupy it.

DISINFECTION OF THE CLINICAL THERMOMETER.

IN a recent number of the *Ohio Sanitary Bulletin* attention is called to the danger of spreading disease by the use of an infected clinical thermometer, and mention is made of one case of syphilis resulting in this way. The ordinary straight clinical thermometer does not readily harbour micro-organisms, provided it is cleansed soon after its removal from the patient's mouth, particularly if this be done before the secretions have had time to dry. If this precaution be not taken and the thermometer be returned to the case, it is possible for both to become a dangerous source of infection and to harbour germs for a considerable time. The risk of spreading infection is greatly increased by using thermometers with the scale-markings etched upon the surface of the glass. Recently Denny has experimentally studied a method of sterilising thermometers by saturating the cotton wool at the bottom of the case with a few drops of formalin solution

He found the method to be efficient, the formalin being sufficiently strong to destroy pathogenic germs, even after three or four weeks. He advises the renewal of the disinfectant at frequent intervals, at least as often as once in two weeks. One advantage of this method lies in the fact that the odour of the disinfectant is a fair index of its its efficiency.

INFANT MORTALITY AND "THE SOOTHER."

"A GRANDMOTHER" writes: "Seeing a letter in this week's LANCET from Dr. Burnet condemning the use of the 'soother,' may I point out that until the monthly nurse (trained or untrained) is forbidden to use it, it is almost hopeless to expect to get it abolished. I feel very strongly about this matter, as after rearing a large family without a 'soother' my first grandchild was born unexpectedly at my home. Before the baby was 24 hours old the nurse (trained) had sent for a 'soother' and a *soothing mixture*. In spite of all I could say the nurse insisted on using both. Every time the child was restless, the soother, smeared with a preparation of glycerine and boric acid (to disinfect it!) was put into the child's mouth. I suppose that sucking to no purpose so much tired the child out, so that when given the breast every two hours, he failed to get enough food. Anyway, from being a fine baby at birth, at the end of a few weeks he had to be brought up by hand, and is still, in my opinion, fighting at 18 months against the effects of 'soother,' soothing mixture, and boric acid and glycerine. The young mother is quite helpless in the hands of a nurse (with her first baby), and I cannot be expected to know as well as a 'trained' nurse."

FIRST AID IN STRYCHNINE POISONING.

To the Editor of THE LANCET.

SIR,—In the Twelfth Edition of "First Aid to the Injured," issued by the St. John Ambulance Association, on p. 153, under the heading "Treatment" (for strychnine poisoning) is the following: "2. Apply artificial respiration." As slight peripheral impressions induce recurrence of the convulsions, it seems difficult for an instructor to know which method of artificial respiration he should recommend the pupils of a "first aid" class to adopt in such cases.

I am, Sir, yours faithfully,

March 19th, 1910. PUZZLED.

A DIRECTORY FOR WET-NURSES.

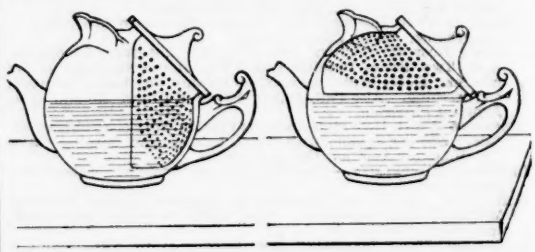
IN the *Boston Medical and Surgical Journal* of March 3rd a novel but very useful project is announced. Under the auspices of the Massachusetts Infant Asylum it is proposed to establish a directory for wet-nurses. The advantages of the project are so obvious that it seems strange that it has not been put into practice before. The value of a good wet-nurse when a mother cannot suckle her infant and her superiority over all methods of artificial feeding are undisputed. But great difficulty may be experienced in obtaining a wet-nurse when she is urgently required. On the other hand, there must always be scattered throughout the community a number of poor women, who may have lost their babies, who would only be too glad to earn money as wet-nurses. The scheme now proposed goes further than merely bringing the two parties to the transaction together. Not only is a list to be prepared of reliable wet-nurses ready at all times for emergencies, but women who wish to act in this capacity will be lodged in suitable surroundings and instructed in their duties. They will undergo thorough physical examination, and if they have babies these will be given all the advantages of the infant asylum. Those who have lost their babies will be given others to nurse, so that their supply of milk will be conserved until employment is offered. It seems to us a great merit of this scheme that if a woman with a baby undertakes wet-nursing the regrettable result of depriving it of breast-feeding may be avoided in an institution where a constant supply of wet-nurses is organised. The project is a most excellent one and worthy of imitation in this country. We look forward with interest to the report of its working.

A MICROSCOPE FOR SALE.

P. S., Tour de Belle Vue, Antibes, France, the widow of a member of the Royal Microscopical Society, is anxious to dispose of a microscope and accessories partly for her own benefit and partly for the benefit of a deserving society. We have been sent the following specification of the apparatus: Ross binocular microscope, complete with lenses and apparatus and case (cost £80); case of bottles for balsams, &c., with mounting table (cost £2); microscopic vice for holding unmounted crystals for examination (cost 15*s.*); Roberts's test plate of fine lines (cost £1 10*s.*); Smith's stage and holder forceps in cabinet-box, with 100 small discs for mounting opaque objects, with adjustment for every direction (cost £3); cabinet of test-bottles for reagents (cost £1 10*s.*); dissecting microscope, complete with compound body (cost £4 4*s.*); diatom finder: field hand microscope (cost £1 4*s.*); pocket microscope (Beale's) lenses from the large microscope, adaptable (cost £1 10*s.*); Smith's reflex illuminator for high powers only with opaque objects (cost 10*s.* 6*d.*); Wenham's reflex illuminator for transparent objects for the highest power (cost £1 10*s.*); Read's hemispherical condenser for the exhibition of diatoms (cost £4 0*s.* 6*d.*); 1/6 object-glass intermediate between 1/4 and 1/8 "Stanley" (cost £1 10*s.*); cabinet of mounted objects (1000), cost £5; about 800 special objects, to be sold together (cost £20); Valentine's knife for cutting thin slices of animal tissue (cost 15*s.* 6*d.*); case of dissecting instruments (cost £2); Smith's holder for mounting objects (cost 12*s.* 6*d.*). All these are in mahogany cases, and there are also three small cabinet boxes for holding 36 slides, a lamp in case, and following books: "Quekett on the Microscope"; "How to Work with the Microscope," Dr. Lionel Beale; "Evenings at the Microscope," Gosse; "On the Preparing and Mounting of Microscopic Objects," by Thomas Davis; "An Elementary Text-book of the Microscope," by T. W. Griffith, M.D., with 12 coloured plates; and "Objects for the Microscope," by L. Lane Clarke.

AN ANTI-TANNIN TEAPOT.

THE figure represents the principle of a new teapot which has been submitted to our inspection by the "Cheerup Teapot" Company, 20, York-street, Glasgow. It will be seen that the tea is received in a perforated chamber fitting into the upper part of the pot which is reversible in such a manner that by giving it a half turn the tea-leaves can be at once lifted above the infusion. The advantages of such a procedure will be apparent to all who have ever been "late for tea"



and have had to assimilate a tannin-laden brew in consequence. The only objection which we have against the teapot submitted to us is that it is made of a highly glazed white porcelain that suggests more an appurtenance of the sick-room than of the tea-table. We are informed that the pot is made in other materials, and we think a brown glazed earthenware would be æsthetically preferable for table purposes.

THE OLDEST KNOWN MUMMY.

Professor G. Elliot Smith has made a minute examination of the mummy of Ra-Nefer in the Museum of the Royal College of Surgeons of England, and finds that it is at least 11 centuries older than any other embalmed body yet described. The mummy of Ra-Nefer was discovered by Dr. Flinders Petrie at Medum, Egypt, in 1892, and afterwards presented by him to the Museum of the Royal College of Surgeons. There can be no doubt that Ra-Nefer belongs to the IVth Dynasty and was a high official under Seneferis. It is not until about the XVIIIth Dynasty that mummies are found in an equally good state of preservation. Embalming was certainly practised in the interval between the IVth and XVIIIth Dynasties, but such specimens as have been found crumbled to dust at a touch, whereas Ra-Nefer is intact and likely to remain so for many more centuries, and exemplifies a phase in the history of embalming which would have been unknown but for the discovery of this specimen.

A PICTORIAL BANDAGE.

WE have received from Messrs. Cuxson, Gerrard, and Co., Limited, a large triangular bandage known as the "Sanoid" which constitutes a first-aid reference sheet as well as a bandage. Six representations of a human figure in various attitudes are printed upon it, showing the bandage applied to different regions of the body as a first-aid dressing for 30 different injuries, the nature of each being indicated by a reference number and table. The bandage should prove of value to all engaged in "Red Cross" work, as the figures are amply large enough to show how the various folds and turns are made. The bandage is about 52 inches broad and 25 inches high.

PRINCESS CHRISTIAN'S FARM COLONY.

Lady Margaret Brudenell Bruce and her fellow members of the committee of the National Association for the Feeble-minded have issued an urgent appeal on behalf of Princess Christian's Farm Colony, in the course of which they say: "Feeble-mindedness is largely hereditary, *and it is therefore one of the most preventable of diseases*, provided only that those afflicted, while being kindly treated and well cared for, can be kept apart from the world. For this reason, the association has founded a farm colony of 170 acres near Tonbridge, where, by the care and control of the feeble-minded, one of the most subtle evils which have ever attacked national life is being successfully combated. The colony is named after the Princess Christian and she will herself open it on June 3rd next. Already there is established a home for lads of 16 to 23 years; these lads, in some cases a source of danger to all around them, are now busily and happily employed in tending the livestock which kind sympathisers have already given and in other colony work. So far a sum of £4300 has been subscribed for the colony, but another £8000 is yet required:

(1) to clear off the debt for the land purchased; (2) to build more homes; and (3) to establish a school and homes for feeble-minded children of both sexes. An earnest appeal is made for the immediate foundation of a home for young girls, who are in greater danger than all others. For this about £1500 will be needed, and a great effort is being made to collect the sum by June 3rd in order that the Princess Christian may lay the foundation-stone. For every £100 we can add a named bed to the colony. Furniture, clothing, and farm stock will be gratefully accepted. Will those who read this show their interest by sending a subscription or donation, marked 'Colony' or 'General Fund,' to the secretary of the National Association for the Feeble-minded, at Denison House, 296, Vauxhall Bridge-road, S.W." The appeal is one which we can commend heartily, as its object is not only humanitarian but of national importance.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 23rd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 17	29·87	W.	0·05	96	52	37	47	48	Cloudy
,, 18	29·72	N.W.	0·03	76	42	40	39	41	Cloudy
,, 19	30·01	N.W.	0·03	75	45	35	38	40	Cloudy
,, 20	30·21	W.	...	67	49	35	36	38	Fine
,, 21	30·18	W.	...	72	54	37	39	40	Overcast
,, 22	30·37	N.	...	91	53	39	39	42	Fine
,, 23	30·50	W.	...	...	...	37	37	39	Hazy

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3.45 P.M., Lecture:—Mr. W. H. George: Anæsthetics.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. C. Wallis: Cancer (Treatment)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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